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Edited by HENRY C. PEARSON—Offices, No. 35 West 21st Street, NEW YORK.

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JULY 1, 1906.

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RUBBER PRICES BECOMING MORE STABLE.

NOT so much is heard nowadays as formerly of the influence of speculation upon the price of crude rubber, and this is probably due to a reason which in time may lead to the disappearance from the trade of speculation, real or alleged. As is well known, the extent of the "invisible supply" of rubber long has proved an inconvenient factor in estimating the crude rubber market situation. It has mattered little how well one might be informed in regard to purchasable stocks, and the rate of production and consumption, so long as no idea could be formed of the amount held in store by manufacturers. Hence the most carefully made estimates of the probable requirements of the market in any particular period have often been upset by an unexpected failure of the trade to buy.

Time was when manufacturers were compelled to buy rubber ahead of their current needs, if for no other reason, to allow it to become thoroughly dried. When the best practice called for the drying of certain rubbers for a year, every important factory necessarily carried large stores, which not only rendered impossible any accurate estimate of the total rubber available in the country—therefore rendering the course of prices more uncertain—but it involved the tying up of much capital in raw material. There was, however, the advantage of the manufacturer being able to remain out of the market, in the event of a sudden sharp advance, until a decline occurred. But gradually the time devoted to drying rubber has been lessened—to a few months, then weeks, and even to 24 hours or less—until many factories now carry very little rubber in store as compared with what was formerly considered essential.

This change of factory practice brings about the buying of rubber more generally on the "hand to mouth" basis, and is leading to the disappearance, in large part, of the "invisible supply." This is now safer than formerly, because of the improved means of communication which, for example, enable the New York trade to learn by cable how much rubber exists at any moment at Manáos, or Accra, or any other primary market, and practically the date on which it can be delivered here. The manufacturer no longer feels obliged to keep a large supply on hand because of uncertainty on these points, which once was as necessary as storage for the slow drying of rubber.

The new condition, therefore, may be summarized as follows: The amount of available rubber in the world can be ascertained accurately on any date, and the amount due to arrive from the principal original sources for at least a few weeks ahead can be calculated with some degree of safety. If, therefore, the average manufacturer can be assumed to hold small stocks, less basis exists than formerly for speculation pure and simple, and prices must constantly tend to become more stable. These tendencies have been at work for years, and the

results to which they point appear to be becoming realized facts. Of course the price of rubber must always fluctuate, as is true of every other commodity, but not necessarily to such an extent as to keep the consumer in a constant state of anxiety.

THE BICYCLE AND THE AUTO.

THERE are some people who, in considering the automobile trade and its great demand for rubber tires, still refer to the rapid rise and decline of bicycling, a few years ago, as an experience which may be repeated in connection with the automobile. The growth in popularity of the automobile does, indeed, suggest the development of the bicycle "craze," but there the similarity ceases. The bicycle may be regarded as a toy which prepared the way for a vastly practical new type of vehicle, with infinite applications in use.

The bicycle filled for awhile an entirely new field, without displacing to any great extent any previous means of getting about. The automobile, on the other hand, has displaced a great number of horse drawn carriages, with such satisfaction to its users that it is hardly worth while to consider the possibility of everybody going back to the old type of vehicle for purposes of pleasure and utility. No doubt many individual users of automobiles to-day may give them up. But ever since horse drawn carriages were first devised there have been owners of such vehicles who gave up their use—grew tired of them or unable to maintain them—but all the while the number of carriages increased. So the retirement every year of many automobilists from the field need not indicate the decline of automobiling—provided, of course, that the modern vehicle has absolute merit, which it undoubtedly has.

We have referred here to the automobile as a vehicle of the pleasure type. But this is not all. The business man who in time may lose his interest in motoring, will, if he has successfully adopted commercial vehicles in his business, continue their use so long as they prove more economical than any other vehicle. The various types of passenger vehicles now coming into public use are not supported as a mere "fad," and will be run wherever and so long as they prove profitable. And the great variety of other wheeled apparatus—fire engines, ambulances, mail wagons, and the like—when once they have demonstrated their superiority to the vehicles and machines which they displace, will not be thrown out of use in response to any mere whim of fashion.

The bicycle has no standing for purposes of comparison. The automobile, in its various forms, is more like a locomotive, doing more work and better and quicker work than the horse in countless situations, without being restricted to steel roadways, and seems bound to last until something even better is developed. And while this condition lasts the demand for rubber tires—and better rubber tires—will grow.

THE FUTURE CABLE INSULATION.

THE construction of submarine cables, though seldom brought to the attention of the average reader, continues to be a most important branch of the rubber and allied industries. Everybody knows that the Atlantic and Pacific ocean beds are spanned by cable lines, and is prepared to hear that many less important bodies of water are similarly crossed. But the total mileage of such cables, and the amount of costly insulation work involved, call for figures which would be surprising to most otherwise well informed persons. According to the figures compiled by *The Electrician* the total length in nautical miles of submarine cables in operation increased from 161,384 in 1895 to 233,823 in 1905—a growth of 45 per cent. in 10 years. In other words, an average annual increase of 7243 miles, or nearly three times the length of the average transatlantic route.

The largest single submarine cable interest is that of the Eastern Telegraph Co., Limited, and the two allied companies, under practically the same management—lately amounting to 73,130 nautical miles, described in a list of the world's cables as 188 different items, and placing nearly every port in the Far East in touch with the rest of the world. The capital shares and debentures of this group of companies—£12,743,506, or over \$63,000,000—are almost without exception yielding dividends, and quoted at a premium on the London Stock Exchange. The number of cable companies has increased steadily and the length of their lines extended, despite the caution which capital has been taught by the introduction of wireless telegraphy.

For most of the great ocean cables, it is true, India-rubber has not been used for insulation, but Gutta-percha. The utility of India-rubber for this purpose has been proved, however, and its employment will be enforced in time by the exhaustion of the natural supplies of Gutta-percha—a material produced under cultivation less readily than rubber. But cable building may properly be included with the rubber industry for the reason that nearly if not all the ocean cables in service have been constructed in works which also manufacture rubber goods, and which do not draw a line between their profits from rubber and gutta, respectively. Ultimately it is possible that they will all be using India-rubber in their submarine work, as they already are in insulation for so many purposes on land.

With means of communication, as with transportation, every extension seems to call for a new one—a line to-day becomes a "system" to-morrow—so that the making of ocean cables may be expected to grow indefinitely. Moreover, the question of replacement of existing cables, though not discussed nowadays, must some time have to be dealt with—all calling for more and more insulating material. It is a fact full of encouragement to the planting interest that all this material, in time, will be rubber.

IF MONEY HAS BEEN FRAUDULENTLY OBTAINED—and especially from persons ill prepared to sustain a loss—whether for the alleged purpose of forming rubber plantations or on any other pretense, the law should be enforced, as it appears will be done in the case of Borges, one of the promoters of the Boston "Ubero" companies. But in this case it is doubtful whether the chief offender has been brought to justice. The companies in whose interest Borges worked were not of his suggesting or planning, nor is it certain that he gained the larger share of the funds misappropriated. The master mind was that of a man who stood high in public esteem—a man of capacity who had the good record of a lifetime to aid him in surrounding the schemes with every evidence of respectability. This man is now a fugitive from justice, and it is inconceivable that he should have consented to sacrifice his reputation and become an outcast from his native land without the assurance of a liberal pecuniary reward. With Owen free, the conviction of his coadjutor and tool does not sufficiently vindicate the majesty of the law in this case.

THE PREDICTION BY DR. WILLIS, of the Ceylon botanic gardens, that the Far East will, within 7 years, be producing 10,000,000 to 15,000,000 pounds of cultivated rubber, and in 15 years "probably exceed the exports of Brazil," is the deliberate utterance of a careful student of the rubber situation. The Editor of this Journal, expressing his conclusions, independently arrived at, before a meeting of rubber men in New York a year ago, pointed out that there were already in the Far East quite as many healthy *Hevea* trees under cultivation as were supposed to be tapped yearly in the Amazon valley—a fact which goes far to support the position of Dr. Willis. Meanwhile more rubber trees are being planted every year, while the number of wild trees tapped does not appear to increase.

A POINT WHICH APPEARS TO BE OVERLOOKED, in the reports of a number of severe automobile tests made lately, is that so few tire troubles occurred. For instance, when Mr. Megargel reached New York, during the month, on his return from a 12,000 mile trip to the Pacific and back, traveling much of the way over wholly unimproved roads, it resulted in high and merited praise for the machine and its occupant. But no published report refers to the much more striking test which the trip afforded of the excellence of the pneumatic tires used. It is understood that only ten tires were employed, all told, and the automobile reached New York with its tires in condition for many more miles' running.

THE POPULATION OF MANÁOS, the rubber city, is reported to be 48,000. The state—of which Manáos is the only city—has been making a loan in London of \$1,703,275 (in United States money), which amounts to \$35.48 *per capita*. Considering the extravagance of Manáos financiering in the past, \$35.48 each is not likely to keep its citizens in funds very long. Why didn't they make it even \$36?

NOTHING MORE CLEARLY INDICATES the progressiveness of the rubber industry in America than the readiness and the success with which the manufacturers adopt new grades of rubber. Every new rubber receives prompt and careful attention, and factory practice is speedily adopted to make it of the utmost possible service. Doubtless the facts given

another page in regard to the amount of Guayule now being consumed in the United States will surprise many in the trade, and THE INDIA RUBBER WORLD is assured that, while little of the plantation rubber from the Far East is imported direct, a very considerable proportion of such rubber produced is consumed in this country.

THERE IS A PROSPECT that the United States may yet become a rubber producing country—and that without going to its tropical dependencies—through the utilization of the Guayule plant, which is known to occur north of the Mexican boundary.

THE FACT THAT THE TIRE POOL is about to disintegrate is published and not only rubber manufacturers but all who use tires are much interested. Brought down to their last analysis the opinions are that the results will be two. First, that tires will be somewhat cheaper; second, that the temptation to make poorer grades of tires which has heretofore not existed in any great measure will be at once introduced into the business. Of course the fact that the tire pool goes out of existence does not make it any easier for manufacturers who are not licensees under certain tire or rim patents to enter the business.

THE GOVERNMENT COTTON CROP REPORT, which has figured largely in the news of the month past, has always a very direct bearing upon the prices of this material. Considering the constant changes in the prices of this domestic staple, the production of which has been so long systematized, it would not be strange if rubber, a tropical forest product, had fluctuated even more than it has.

IT IS NOT KNOWN WHEN THE "SIXTY DAYS" within which the Colorado rubber was to appear on the market will expire.

STILTS FOR HIGH RUBBER TAPPING.

A PRACTICE in the turpentine producing regions of France, described in the New Orleans *Times-Democrat*, might possibly be adopted with advantage in the tapping of rubber trees, in some circumstances. It is walking on stilts.

It appears that young pine trees are tapped low, but with each year's passage the incision is made higher up, so that it is not long before most of the trees are tapped 20 or 30 feet from the ground. Hence the huge stilts of the workmen. On these stilts they traverse the flat country, covering five or six yards with each stride, and quickly and easily collect the turpentine that overflows the little buckets hanging high up in the trees.

The stilt wearers carry a 15 foot staff with a round, flat top like a dinner plate. When it is lunch time or when they are tired they plant upright under them the staff and sit down on its round, flat top. Then in comfort seated so dizzily high, they eat and rest and chatter—a strange sight to behold.

Where rubber trees are to be tapped at a considerable height from the ground, as not infrequently happens, the use of stilts might prove more convenient some times than any means now employed by the rubber gatherers for reaching their work.

THE OBITUARY RECORD.

RICHARD PRATT MARVIN, secretary of The B. F. Goodrich Co. (Akron, Ohio), and a large stockholder in the company, died at his home, Portage Path, Perkins Hill, near Akron, on Saturday morning, June 23. His death, which followed an illness of two years, was the immediate result of a stroke of paralysis which he suffered on the preceding Tuesday. Mr. Marvin was born at Jamestown, New York, May 30, 1848. He was the son of Judge Richard P. Marvin, of the New York supreme court, and Isabella Newland Marvin.

Mr. Marvin was a graduate of Rochester University, in the class of 1870. He studied law in Jamestown and, removing to Akron, was admitted to the bar in 1872, and afterward practiced law with the late Judge E. P. Green. He was mayor of Akron in 1874 and again in 1878. Shortly after being admitted to the bar Mr. Marvin became legal adviser of the late Dr. B. F. Goodrich. In 1880 he became secretary of The B. F. Goodrich Co., which position he occupied until his death, and was active in the management of that large corporation. In 1892 he married Jane, the daughter of the Hon. Lewis Miller. Mr. Marvin died in 1898. In 1900 Mr. Marvin married Mrs. Grace Perkins Lohmann, who survives him. Mr. Marvin for many years was active in the Masonic fraternity, being both a Thirty-third degree Mason and a Mystic Shriner. Funeral services were held on Monday, June 25, the interment being in Glendale cemetery, in Akron. During the hours of the funeral the plant of the Goodrich company was closed.

Something over a year ago, on account of Mr. Marvin's impaired health, the office of assistant secretary of the Goodrich company was created, to relieve him from active charge of the office of secretary.

* * *

OTTO G. MAYER, of New York, who died on June 23, was for a number of years connected in an important way with the crude rubber trade. Born in 1852, at Mannheim, Germany, he came to New York when about 20 years of age to enter the employ of Erwin Gompertz, a merchant engaged in trade with Europe. Mr. Gompertz returning to Paris, his business was continued by Materne & Mayer, and later by Mr. Mayer alone, until 1886. In that year he joined the firm of De Long, Mayer & Co., successors to William Jex & Co., importers of crude rubber and other Central American products, the house of Jex having been long established. Three years later, William A. De Long retiring, the firm of Otto G. Mayer & Co. was established, continuing in the rubber trade until 1902, when it was liquidated. After spending two years in Europe for the benefit of his health, Mr. Mayer returned to New York and became connected with the firm of Ladenburg, Thalmann & Co. as manager of their Pyrites department. Mr. Mayer is survived by a widow at West Orange, New Jersey.

* * *

PIERRE T. BETTS, well known in the trade as a broker in crude India-rubber and Gutta-percha, at No. 43 Murray street, New York, died at his home in New Jersey, on May 30, shortly after an attack of heart disease. He was born in 1859, in Brooklyn, New York, being the son of DeWitt Clinton Betts. An uncle James A. Betts, was for many years engaged in the rubber brokerage business, which may have

influenced his nephew in the choice of a career. Pierre Betts, about 1886, entered the house of Robert Soltan & Co. (New York), a German house engaged in handling crude rubber and gutta, and also the manufacture of Gutta-percha tissue. In time, after the death of Mr. Soltan, he became manager of the house. In 1901 Mr. Betts engaged in business on his own account, as broker and commission merchant in the commodities above mentioned. He was successful in business, and his many admirable qualities gained a large circle of friends. About 14 years ago Mr. Betts married Miss Annie E. Teets, of Connecticut, who survives him. Mr. Betts was a brother of Mr. William C. Betts, of the New York Commercial Co.

CRUDE RUBBER AND PLANTING.

THE Inca Rubber Trading Co., incorporated under the laws of Maine, May 29, 1906, with \$5,000,000 capital authorized, is the company referred to in a preliminary prospectus reviewed in THE INDIA RUBBER WORLD, February 1, 1906 (page 143). The purpose is to consolidate certain rubber exploiting interests in Peru.

Mexican Crude Rubber Co. is the name of a company organized, with \$300,000 capital, at Detroit, Michigan, to extract rubber from the Guayule plant in Mexico. Ralph M. Dyar is president; W. C. McGraw, vice president; H. C. Bennett, secretary, and Walter E. Parker, general manager, and other Detroit business men are interested.

The Castilloa Planters' Co., Rochester, N. Y., was incorporated June 6, 1906, under the laws of New York, with \$25,000 capital, Percy E. Snell, Gilbert F. Crump, and Owen E. Jones.

The United States Gold Dredging and Rubber Co. (Jersey City, New Jersey), in a prospectus dated May 10, in addition to gold dredging, points out the profits possible from rubber planting, in the province of Esmeraldas, Ecuador, to which it is proposed to devote \$50,000.

LITERATURE OF INDIA-RUBBER.

A COMPILATION OF NOTES ON INDIA-RUBBER AND GUTTA PERCHA. Department of the Interior—Bureau of Forestry. Bulletin No. 3. Manila: Bureau of Printing. 1906. [8vo. Pp. 40 + map.]

THIS pamphlet has been compiled by Captain George P. Ahern, director of forestry in the Philippines, in answer to many requests from persons for information bearing upon rubber culture. The first page mentions the prices paid by Mr. John H. Cheever, a former leading manufacturer in New York for crude rubber, as compared with later prices. This, by the way, and more than a dozen other articles, are credited to THE INDIA RUBBER WORLD, besides which extracts appear from Mr. Pearson's "Crude Rubber and Compounding Ingredients."

IN CURRENT PERIODICALS.

On the Life History of *Termes (Coptotermes) Gestroi*, Wasm. The Hevea Rubber Termite. By E. P. Stebbing. [Ants which attack the Para rubber tree in the Far East.]—*The Indian Forester*, Allahabad. XXXII-3 (March, '06). Pp. 110-114.

Standardizing Rubber Covered Wires and Cables. By John Langan. *Proceedings of the American Institute of Electrical Engineers*, New York. XXV-4 (April, '06). Pp. 189-202.

Paper versus Rubber Insulation for Electric Cables. By W. I. Tamlyn. [Relates to cables for three phase distribution.]—*Engineering News*, New York. LV-1 (Mar. 15 '06) P. 28.

A FLYING TRIP TO JAMAICA.

By the Editor of "The India Rubber World."

JAMAICA—peaceful, fertile, rich in cheap, free labor, and close to the United States through location and language, will some day, perhaps very soon, be an exporter of India-rubber gathered from annual crops. The beginning of experimental planting may be even be-



KINGSTON STREET, KINGSTON.

fore this article goes to press, hence the story of the island, briefly told.

I had long wished to visit it and see for myself how it sized up as a place for planting rubber. This wish was intensified when Professor N. L. Britton, director of the New York Botanical Gardens, leased the English tropical experiment station at Chincona, and assured a future for American botanical work in which rubber can hardly be ignored. I was more than glad, therefore, when my journeyings made it convenient for me to stop and have a look for myself. We left New York late in November on the *Sarnia*, which was crowded; so much so that one of our party, planning for my comfort, wrote a few days prior to the start:

"I have ordered the upper bunk in Stateroom 21 made up especially for you, with a delicate blue counterpane, with little pink ribbon bows on the pillows which I think will match up with your beautiful complexion very well."

Newspapers, however, have special privileges, particularly when the Editor knows the agent of the line, so I was able to secure a roomy cabin by myself, but alas, without the delicate colored counterpane and ribbon.

We got off in a snow squall and stopped for an hour in Gedney channel to ease up on a hot bearing, and then we put out to sea. It was not too rough to have the port holes open, although an occasional big wave slopped in. Our fellow passengers were a circus troupe on a two years' circuit around the world, via South American ports; some mining and lumbermen bound for Columbia, and a miscellaneous lot of tourists. One of the lumbermen confessed to owning a small plantation of *Castilloa* in Honduras, but was far from enthusiastic about it, as he could not keep the natives from stealing the rubber, poor though the yield was.

As we got further South it became warmer very rapidly and soon sweaters and heavy suits were laid aside. At Fortune Island we took a lot of Jamaica negroes aboard, and one evening they came to the promenade deck and gave a concert. It was very darkeyish, but not half so musical as what the American plantation negroes do. Off the coast of Cuba the temperature on deck was 88 and in my cabin, 98. It is unnecessary to state where I spent most of my time.

Now just a word concerning the place we were to visit. The island of Jamaica was discovered in 1494 by Christopher Columbus, who was very much taken by its beauty, and delighted with the politeness and good nature of the natives; so much did he and his followers appreciate them that within a very few years they had robbed them of all they had and practically exterminated them. The island, by the way, was not known as Jamaica in those days, but as Chab-makia, from two Indian words meaning wood and water, or in the thought of the Indian, "watered by shaded rivulets." The Spanish softened the word to Chamakia, and in turn the English made it Jamaica.

In 1654 the English captured the island and began to colonize it. For many years they sent their convicts there to work for the planters, but in 1689 the labor situation was such that the government recognized slavery, and for a time all was peaceful. There were several revolts, however, on the part of the slaves, one occurring in 1760, when 60 planters were killed and half a million dollars' worth of



COUNTY NEGROES.

property destroyed. The rebels were finally subdued, and as a warning, one of the ringleaders was burned at the stake and two others were put in iron cages and allowed to slowly starve to death. In 1834 the British government insisting that the slaves be freed, arranged an apprentice system for the 311,000 slaves, by which laborers in the field were to work for six years more and then be free; while domestic laborers were to work four years more. The crown also paid \$30,000,000 indemnity to the owners. After being freed the slaves became English subjects with all their



BOG WALK.

rights, and it is only fair to the black race to say that they have progressed remarkably; as well, perhaps, as whites would have done under the same circumstances. To show the proportion of whites and blacks on the island, there were at the last census 14,692 whites, 121,955 colored people, 488,624 blacks and 14,000 East Indians, Chinese, etc.

The "Jamaica nigger" at home is not a very hard worker, but he is good natured, self respecting, and in many cases thrifty. The island does not afford enough work for him, and so they are to be found all up and down the coast of Central America, where they are very proud of the fact that they speak English and that they are free men.

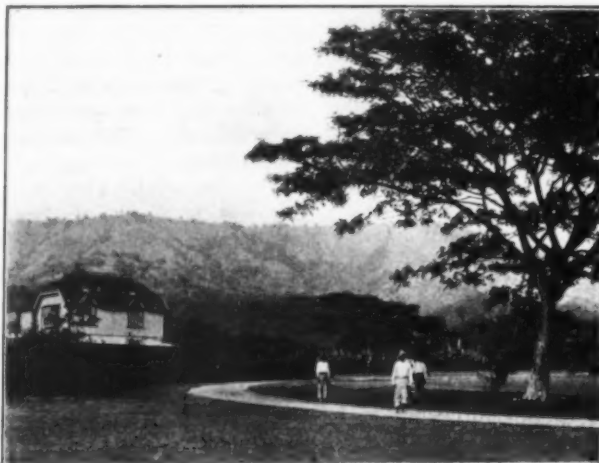
It is doubtless a surprise to many people when they discover how far south Jamaica really is. The island lies directly opposite Cape Gracias a Dios on the Mosquito coast of Nicaragua, and it is so situated that when the Panama canal is finished it will be a most important strategic point. The chief business of the island is planting sugar, coffee, bananas, etc. The natives work as a rule from seven in the morning until four in the afternoon, with an hour out for noon breakfast. They rarely work Saturdays. The average pay for field labor is 50 cents a day. The island, although only 144 miles long and 49 miles wide, has a climate varying from tropical to temperate. The mean rainfall for the whole island annually is 66 inches. The northeastern end, however, has an area where the rainfall is 100 inches and over, and northwest of this there is quite a tract where it is from 75 to 95 inches. The western central portion has a large area that runs from 75 to 95 inches, while all along the coast and a strip through the middle of the island, there is only 40 to 50 inches, and in places 30 to 35. It will thus

be seen that the planter can get almost any rainfall his crops may need. The island is of volcanic origin and indeed, has been, within the memory of man, visited by severe earthquakes. The formation is coral, white and yellow limestone, and in some places, trap rock. In the river valleys there are some quite rich alluvial areas where excellent crops are produced. There are many thousands of acres of crown lands not yet taken up, which are disposed of to settlers under exceedingly favorable terms.

Very early in the morning we passed the old Spanish fort at Port Royal, entered the harbor, and at seven o'clock were tied up at the pier in Kingston. The wharf was crowded with ebony-colored "Englishmen," who bore themselves with much dignity. Pushing through them we made our way to the Myrtle Bank Hotel where a good breakfast was discussed, and then we did the town; that is, until the sun got a bit too hot for walking. As I wanted to get all the official information possible, we looked up the Department of Agriculture. In a short time we were furnished by the very capable secretary, with maps, rain charts, reports and practical information that told pretty nearly all we wished to know. The officials were most prompt and polite and really saved us days of hard work in what they furnished us.

The printed matter was good, but we wanted to see rubber growing, and therefore took the nineteen-mile trip to Castleton Gardens. These gardens, established some forty years ago in what was supposed to be a sheltered valley, would, if more money were spent upon them, be of great value to the whole of the West Indies. The average temperature at the gardens is 76 Fah. and the rainfall 114.07 inches, annually. The first ten miles of the journey was by

excellent trolley cars, and gave us a fine chance to view the country. The product most abundant was of course the



ENTRANCE TO HOPE BOTANICAL GARDENS.



PORT ANTONIO.



SUGAR CANE FIELD.

banana, grown in big and little lots for the United Fruit Company. At the end of the trolley line was the Constant Spring Hotel, where we secured carriages for the rest of the journey. The way was hilly, but the roads good, and the soil although not apparently rich, seemed, under the influence of the sun and the abundant rainfall, to be very productive.

The gardens were in a measure a disappointment, as they are not large, and have a neglected look, except in parts. This is due to lack of money and not lack of interest on the part of the caretakers, the whole appropriation for the upkeep being \$15, gold, a week. Unfortunately when the first real experiments in rubber culture in Jamaica were undertaken, the Ceará tree was selected as the best fitted for that climate. As far as can be learned, the tree behaved exactly as it did in Ceylon, grew vigorously, but as a latex producer was a disappointment.

There were several specimens of *Ficus elastica* and *Landolphia* as well as some fairly good *Castilloas*. The rubber trees that gave the most promise, however, were *Hevea Spruceana* and the *Hevea Brasiliensis*. The *Spruceana* was particularly thrifty and gave out latex abundantly. The rubber from it was of a light yellow color and very tough. The trees that we saw were only a remnant of a fine lot, most of which were destroyed by a hurricane that swept the island some little time before. Our guide, by the way, who was a negro foreman at the garden, knew the botanical names of all of the plants, and was indeed better posted than any white man that we saw out there.

The elevation of the gardens is 370 feet, and there seemed to be plenty of land thereabouts that could be utilized for *Hevea* growing. As labor (negro) is very plentiful, and the daily wage 50 cents, and as in addition the laws are as good as anywhere in the North—given no more hurricanes—it would look as if rubber might be made to pay. The soil, as already remarked, is in this part of the island, poor, but royal palms, cocoanuts, ceiba trees, indeed all of the ordi-

nary growths of the tropics were in evidence. In addition to this, a few miles took one up in the mountains to almost any climate that one could choose, a valuable adjunct to a tropical plantation operated by a white man.

About six miles from Kingston are the Hope Gardens which are both for botanical specimens and great nurseries. Here are 212 acres, the elevation being 600 to 700 feet. The annual rainfall is 54.21 inches and the average temperature 77.2°F. Of the rubber trees that are growing in these gardens only the *Hevea* and the *Castilloa* are conspicuous. The former does not seem to do well at all, as it is spindling in its growth and far from vigorous. This is undoubtedly due to the comparative dryness of the atmosphere. The *Castilloa*, however, showed a fine growth, due no doubt to the fact that it was irrigated. If its vigorous growth means added latex, it opens up a new field for the planting of this tree where there is small rainfall but plenty of water for surface work.

It may not be generally known, but Jamaica has its own

rubber producer, a climbing shrub known as the Milk Withe. Its botanical name is *Forsteronia floribunda* (G. Don) and its stem yields a rubber that as long ago as 1891 was valued in England at 79 cents a pound. That does not mean necessarily that the product is equal to fine Pará, although it brought the Pará price, for the samples were very dry and showed but little shrinkage. It is a fact, however, that it was a good grade of rubber and if the reports of the first shippers are accurate, the latex is very rich in Caoutchouc.

To go back a little, the plant is a climbing vine or liane, and grows only in the woods in the interior, chiefly in Manchester and St. Elizabeth counties. The best manner of coagulating was found to be the simple application of heat. So far, it has never been exploited commercially, nor is it known whether or not the vine is susceptible of cultivation.



COCOANUT PALMS.



CASTLETON GARDENS.



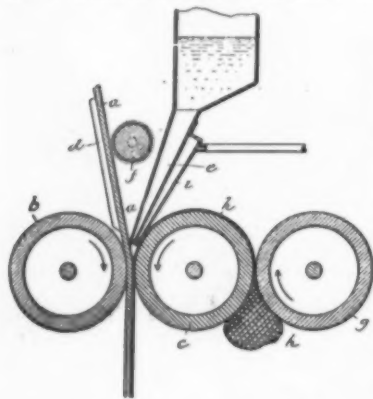
CASTILLOA ELASTICA IN HOPE GARDENS. (TREE 3 YEARS AND 6 MONTHS OLD.)

Reverting again to the *Castilloa*, there is said to be one plantation of some 3000 trees at the western end of the island, but it is carefully guarded and information refused to all.

I have not touched upon the varied delights of Jamaica to the winter tourist, nor described the many minor adventures that three Americans off for a holiday are sure to discover, for this after all, is not a holiday tale. It is rather a suggestion to Americans and English, that Jamaica is a good place in which to "get busy" on the short crop proposition.

COATING LEATHER WITH RUBBER.

BY a recently patented process and apparatus it is believed by the inventor that a solution of the problem, how successfully to apply a coating of rubber to leather, has been found. The sheet of leather to be coated passes over a guide against which presses a rotary wire brush. This brush revolves with great rapidity, and in so doing raises a



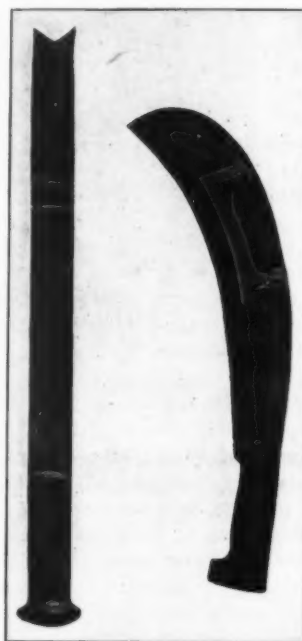
nap on the surface of the leather to which the rubber is to be applied. The leather is then passed on between two rolls, one of which is a bed roll heated to a temperature of 100° F., and the other, the pressure roll, with a temperature of 300°. Above the bite of these rolls is a receptacle filled with thin unvulcanized rubber. A funnel shaped nozzle conveys the rubber to the face of the leather and distributes it smoothly

and evenly over the surface, where it embeds itself in the nap which has been raised by the brush before the fibers are subjected to the pressure of the rolls. In close proximity to and cooperating with the pressure roll is a third roll, also carrying a temperature of 300°. Between these two rolls passes a film of unvulcanized rubber which is drawn from a plastic mass beneath them. The film is conveyed over the center roll and between that and the bed roll it is pressed against the already rubberized surface of the leather, the first coating acting as a cement. The two coatings of rubber adhere firmly to each other and form a layer which is afterward vulcanized. When the rubber coating is vulcanized it is practically inseparable from the leather, as the fibers of the leather are firmly embedded in the vulcanized rubber layer. The patentee is Joseph J. Steinharter, of Philadelphia.

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TWO NEW TAPPING TOOLS.

A GREAT variety of tapping tools have been designed and "tried out" by individuals interested in rubber planting in Mexico and Central America. The illustration shows two types designed for tapping the *Castilloa*. The straight bladed knife is one that is used successfully in Nicaragua, where planters are able to control their workmen



and teach them to use something beside the machete. In Panama, for example, where wild trees are tapped it has so far been found impracticable because the workers complain that it hurts the hand. This is explainable when one understands that the knife is placed against the porous bark and struck a smart blow with the heel of the hand, driving it through the lactiferous tubes. The knife is theoretically perfect, as it is impossible to injure the wood by its use and it secures a good flow of milk.

The curved knife also shown in the illustration is the invention of Mr. Elliott Durand, who is already using it successfully on his Mexican plantation, "Cascajal." It comes so near to the machete that the natives like it and the little guard on the blade makes it easily adjustable for plantation work where the trees tapped run in regular sizes and where the thickness of the bark shows but little variation.

HAROLD W. FRENCH, Akron representative of George A. Alden & Co., and the New York Commercial Co., has an attractive sample room, with an excellent arrangement of his crude rubber samples, nearly 200 in number.

NEW GOODS AND SPECIALTIES IN RUBBER.

THE G & J TIRE STRAPS

THREE excellent emergency straps for temporarily repairing bursted or punctured tires are put out by the G & J Tire Co. The first of these is the Repair Strap shown in the illustration. It is made of heavy canvas, 2 1/4 inches wide, and covered with a coating of rubber.



One end of the strap is buckled to a spoke and the remainder tightly wrapped around the tire, making seven to eleven turns according to the size

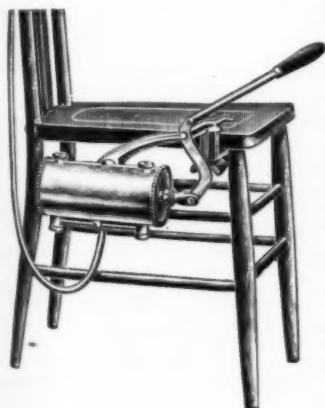
of the tire, and the end securely buckled to another spoke. The outside tire sleeve is another good device. It is made in one piece, of thicker canvas and rubber than in the repair strap. It has eyelets and lacings and is made in several sizes to fit tires of various types. The third of the series is called the G & J inside tire sleeve. This is a belt of soft rubber. Its function is to mend a bad rent in the tire until the car can be run to a shop where permanent repairs can be made. It serves its purpose better when used in connection with one of the devices above described. [G & J Tire Co., Indianapolis, Indiana.]

CLOTH LINED WATER BOTTLE.

THE "Wearever" is the very suggestive name given to the cloth lined water bottle that is high in popular favor at the present time. It may be had with or without the "holdfast" attachments and with smooth or ribbed surface. It is light and at the same time strong, a combination that is as desirable as it is rare. The colors in which it comes are maroon, non-blooming and white. Syringes with tubing to match and combination water bottle and fountain syringe with rapid flow attachment are also specialties in this line of goods. [The Faultless Rubber Co., Akron, Ohio.]

AN INGENUOUS AIR PUMP.

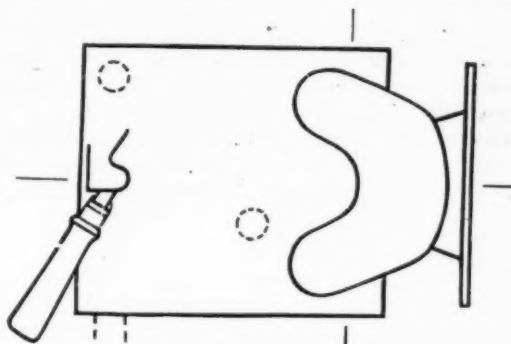
A DESCRIPTION has sometime appeared in this department of the Evans vacuum cap, designed for the stimulation of the circulation of the blood under the scalp by means of creating a vacuum under an airtight fitting helmet. An ingenious air pump is used in connection with forming the vacuum, the same being attached to the chair in a position convenient for its working by the person taking the treatment, and we have thought it worth while to present an illustration of this feature, as a matter of interest, perhaps, to



others requiring a simple and convenient air pump. [Evans Vacuum Cap Co., Fullerton building, St. Louis.]

RUBBER STAMPS IN DRAFTING WORK.

WITH the improvements constantly being made in the construction of rubber stamps, they are all the while finding new uses. One which has not been referred to before in these pages relates to their application to work in drafting rooms. It often happens that many copies of a single detail in mechanical drawings, or in architectural work, are required, and the time and expense involved in making duplicates by hand are avoided by having a rubber stamp made



RUBBER STAMP FOR MECHANICAL DRAWING.

of the feature which is to be repeated a number of times. It may be that part of a drawing will need to be repeated many times, while additional details will have to be made separately in each case. When this occurs, it may prove economical to have the part which is to be often repeated made in the form of a rubber stamp. Such stamps have been made extensively for mechanical concerns and for the United States navy by T. S. Buck Manufacturing Co., New York.

A GERMAN RUBBER TIRE TREAD.

OF the many tire treads that are designed to prevent skidding, one that is illustrated here deserves special mention because of its undeniable merit, and, again, because it is made of rubber and is really a part of the tire itself. The Calmon tread is rigid, yet pliable; resilient, yet durable. In design it is neat and slightly. As a preventive of punctures it is claimed that this tread is one of the most efficacious in the market. It may be made as a part of the tire, or as a separate band and vulcanized on the outside of any rubber tire. [Asbest- und Gummiwerke Alfred Calmon, Act.-Ges., Hamburg, Germany.]



THE "EUREKA" BED CLOTHES FASTENER.

FEW simple inventions promise more in the way of genuine helpfulness in the household than the "Eureka" Bed Clothes Fastener. For weary mothers who have been in the



habit of watching the crib lest the baby be uncovered, its use means sleep, with all care removed; for the nurse it means a sense of safety, for the patient is in no danger of exposure to drafts, and to the child or invalid it means comfort. The pins, which are fastened to the upper bed clothes only, allow ample room for all thick-

ness of the coverings, and the elastic band gives perfect freedom of movement. Another feature that lends itself to consideration is found in the readiness with which it can be detached, the spring between the elastic and the cord making this possible. The use of the two fasteners precludes all possibility of any dragging of the bed clothing on either side. [The Hospital Supply Co., No. 35 East Twentieth Street, New York.]

TROUSER CREASE OF RUBBER.

To the fastidiously dressed gentleman nothing is of greater importance than the well defined crease in his trousers. This necessitates frequent pressing and oftentimes attendant discomfort. The "Indestructible Crease," made of rubber, is the invention of a commercial traveler, who relates an experience of having to sit, minus trousers, in a tailor's back room while the only pair he had with him was being pressed, and from that episode dates the conception of this adjunct of a gentleman's wardrobe. It holds the crease firmly, as originally made, as long as the trousers last and prevents, to a great extent, the unseemly bagging at the knees. The cost is very slight, and the simplicity with which a permanent crease is affected makes one wonder why the little device has been so long in making its appearance. [John Emison, No. 15 Cornelia street, Brooklyn, N. Y.]

GALWAY SURGICAL OPERATING PADS.

A DISTINCTIVE feature of the surgical operating pad shown in the illustration is the back rest, which is so stayed as to support the heaviest patient without collapsing. It can be filled with either air or hot water, the latter proving very comfortable to patients and at times of very decided value.



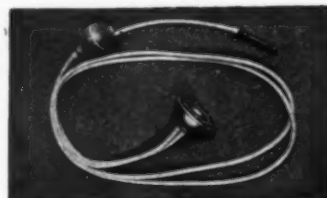
Irrigation or douching by means of this pad can be done with special ease and comfort to the patient. Perfect drainage and cleansing are provided for, together with ample operating room at tip of rims, and there is no crease where the bottom joins the rims. [The B. F. Goodrich Co., Akron, Ohio.]

LEADER CONVEYING TABLE.

THE Leader conveying table is an ingenious and thoroughly practical device for expediting the neck labeling, capping, and tin foiling of bottles, but may be made equally applicable to many other uses. It brings the work directly in front of the operators, who are arranged on one or both sides of the table. This operation greatly facilitates handling and cheapens the process materially. The table is of the ordinary shop variety and may be made in any desirable length. A mechanism of simple arrangement carries the wide rubber belt from one end of the table to the other and the bottles, cans, boxes or whatever goods are being handled are carried to the operators, who do not have to leave their places at the table or even reach for the pieces or push them aside. [The Bottlers' Machine Co., No. 89 Beach street, Boston.]

"YLDR" PNEUMATIC SYRINGE.

THE practicability of the employment of pneumatic force in syringes has been successfully demonstrated in the "Yldr" Pneumatic Syringe, which has recently been placed on the market. This is the outcome of the study of the



simplest and most efficient methods of raising liquids and has marked advantages over the suction principle. A lighter and larger bulb may be used in operation,

which is immediately refilled after release, and the ability to raise liquids to a considerable height is also obtained in its use. These features alone insure its popularity, while the expedition with which the liquid may be discharged comes in for its share of consideration. [Cleveland Rubber Works of the Mechanical Rubber Co., Cleveland, Ohio.]

HOLLOW RUBBER CASTING FROGS.

EVERY devotee of the rod and line—with the possible exception of the one to prove the rule—finds keener satisfaction in his favorite pastime when using the hollow rubber casting frogs and frog harness with single or double Carlisle hooks. To J. T. Hastings & Co., Chicago, who manufacture this innocent looking little device, the thanks of many sportsmen have been extended, for with rubber frog castings, "fisherman's luck" is not so apt to be put in the classification of "other uncertain things." The summer sport in which so large a proportion of the vacationists indulge, will be greatly enhanced by the use of the frog and its popularity is sure to advance appreciably with the advancing season.

HARLAN'S BATH AND COMPLEXION BRUSH.

A UNIQUE and useful rubber toilet accessory is a new and excellent bath brush. It possesses various beneficial qualities, and especially from a sanitary standpoint, for it arrests declining energy by invigorating the circulation. By gently rubbing with the brush it imparts to the skin softness and smoothness, and produces a healthy glow. It is also recommended as a complexion improver and beautifier. The pores of the skin are cleansed and the skin itself becomes pliable and healthy. Roughening, thickening, and sallowness of the skin are averted by the use of this brush. [The Harlan Manufacturing Co., Toledo, Ohio.]

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED MAY 1, 1906.

- N**O. 819,036. Cushion tire. F. M. Ashley, New York city.
 819,112. Dish cleaning apparatus [with hose connection]. R. Wylie, Napa, Cal.
 819,156. Appliance for putting tires on the rims of vehicles. L. G. Morrill, Norwood, Mass.
 819,294. Fountain pen. H. B. Levy, New York city.
 819,330. Hypodermic syringe. O. A. Ycaza, Guatemala, Guatemala.
 819,374. Elastic tire for road wheels. E. C. F. Otto, London, assignor of one-half to G. F. Richardson, Lee, England.
 819,387. Pneumatic tire. C. R. Twitchell, assignor of one half to J. M. Brennan, both of Los Angeles, Cal.
 819,452. Pneumatic cushion. V. H. Podstata, Dunning, Ill.
 819,459. Applicator for mechanical massage. C. H. Richwood, Boston, Mass.
 819,503. Tire for vehicle wheels. V. E. Belledin, Paris, France.
 819,529. Vulcanized material and process for making the same. F. Ephraim, San Francisco. [Process intended for Guayule and other like plants.]

Trade Marks.

- 5,095. Rubber boots, shoes and galoshes. Ostasiatische Handelsgesellschaft, Hamburg, Germany. *Essential feature.*—The representation of a porter carrying on his shoulders a yoke, to which, on both sides, several boxes are fastened by means of ropes, such representation being shown in a rectangular frame having scroll work in the corners.
 5,159. Hard rubber syringes. American Hard Rubber Co., New York city. *Essential feature.*—The words ROYAL EXCELSIOR.
 5,165. Soft rubber bulb and fountain syringes. *Same. Essential feature.*—The word CROWN.

ISSUED MAY 8, 1906.

- 819,719. Fountain pen. F. C. Brown, New York city.
 819,845. Shoe [with elastic heel cushion]. H. F. Browne Swampscott, Mass.
 819,852. Swimming glove. M. S. Christopher, Survey, Fla.
 819,900. Golf club, having a flexible cushion. C. E. R. Martin, Newark, N. J.
 819,903. Mattress. F. Maussner, Philadelphia.
 820,017. Physical exercising device. I. O. Russell, assignor to J. T. Horn both of Indianapolis, Ind.
 820,031. Securing device for rubber shoes. C. A. Woollen, assignor of one-half to E. W. Bareuther, both of Mattoon, Ill.
 820,045. Dental vulcanizer. E. A. Gudex, Milwaukee, Wis.
 820,067. Pocket ash receptacle. L. D. Richardson, Fredericksburg, Va.
 820,077. Vehicle wheel. G. S. Whiteley, Baltimore, Md.
 820,104. Pneumatic tire. P. W. Fawcett and E. L. W. Bellhouse, Sheffield, England.

Trade Marks.

- 5,162. Hard rubber battery cells. American Hard Rubber Co., New York city. *Essential feature.*—The word symbol VOLCAN.
 5,011. Rubber packing, rubber gaskets, rubber disks, rubber rings, and rubber washers. A. B. Jenkins, New York city. *Essential feature.*—The facsimile signature JENKINS BROS., in the handwriting of A. B. Jenkins.
 16,918. Rubber covered electrical wire. J. A. Roebing's Sons Co., Trenton, N. J. *Essential feature.*—A helically arranged red thread or strand woven into the covering of the wire.
 17,953. Dress shields. I. B. Kleinert Rubber Co., New York city. *Essential feature.*—The fanciful word LINGERIE.
 18,406. Rubber boots and shoes. Hood Rubber Co., Boston. *Essential feature.*—The representation of a bow and two arrows crossing the same.

ISSUED MAY 15, 1906.

- 820,437. Hose or pipe coupling. J. Pehrson, Willowbrook, assignor to I. T. Avelsgard, Yorkton, Canada.
 820,668. Nozzle for street flushing. C. K. Pickles, St. Louis, Mo.
 820,673. Tire for vehicles. T. C. Sanderson, West New Brighton, N. Y.

- 820,679. Bulb attachment for bottles. H. B. Studley, Corona, N. Y.
 820,691. Traction attachment for automobile wheels.
 820,738. Tire for vehicles. T. S. Sanderson, West New Brighton, N. Y.

Reissue.

- 12,483. Interlocking tile for floor or wall coverings. A. W. Nilsson, New York city.
 820,110. Means for repairing punctures in pneumatic tires. H. Harrison, Erdington, England.
 820,221. Tiling. L. F. Lindley, Chicago.
 820,232. Horseshoe [with recesses for elastic cushion]. B. Messenger and A. Messenger, Philadelphia.
 820,296. Method of making armored tires. V. Gallien, assignor to Société Anonyme des Pneumatiques Cuir "Samson," Paris, France.
 820,328. Hose nozzle. C. S. Alderman, St. Louis.

Trade Marks.

- 2,633. Dress shields. The Kora Co., New York city. *Essential feature.*—The word KORA.
 6,394. Rubber boots and rubber shoes. Goodyear Rubber Co., New York city. *Essential feature.*—The representation of a gold seal bearing the name of the applicant, GOODYEAR RUBBER CO., and the words and figures GOLD SEAL 1872.
 7,782. Rubber boots and shoes of all kinds. Rice & Hutchins, Inc., Boston, assignor to Rice and Hutchins, Inc. *Essential feature.*—The word EDUCATOR.

ISSUED MAY 22, 1906.

- 820,972. Bathing corset. K. Hatch, New York city.
 821,041. Repair plug for pneumatic tires. R. P. Kinney, Cleveland, Ohio.
 821,066. Manufacturing rubber nipples and the like. E. J. Sonn, Brooklyn, N. Y.
 821,121. Conveyor belt. G. C. Plummer, Philadelphia.
 821,180. Electric massage and vibrator machine. S. W. Moon, assignor to Horto Electric Co., Chicago.
 821,259. Douche apparatus. C. P. T. Roux, Niort, France.
 821,354. Inhaling apparatus. T. H. Gebauer, Cleveland, Ohio.
 821,389. Medicine distributor having a compressible bulb. C. L. Wells, St. Paul, Minn.
 821,530. Horseshoe. G. B. Paul, Clinton, Mo.

Trade Marks.

791. Automobile tires and tire treads. C. J. Bailey, Boston, Mass. *Essential feature.*—A cross sectional view of a tire, surrounding the words BAILEY'S WON'T SLIP AUTOMOBILE TIRES.
 8,065. India rubber pencil erasers. L. & C. Hardtmuth, Vienna and London. *Essential feature.*—The letter H two stars and a circle surrounding the letter H and the stars.
 8,248. India-rubber and Gutta-percha pouches and receptacles for holding tobacco. Adolph Frankau & Co., Ltd., London. *Essential feature.*—The letters B B B.
 10,087. Rubber boots, shoes, and overshoes. M. D. Wells Co., Chicago. *Essential feature.*—The representation of a child having her arm about a dog's neck, together with the words BEST ON EARTH, the figures and words being arranged on a background representing the earth.
 14,598. Rubber packing. Peerless Rubber Mfg. Co., New York city. *Essential feature.*—The letter P enclosed in a diamond-shaped outline figure.
 14,599. Rubber packing. *Same. Essential feature.*—The word PEERLESS.
 16,603. Rubber belting. Carolina Supply Co., Greenville, S. C. *Essential feature.*—The word SQUAREDEAL.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1904.

* Denotes Patents for American Inventions.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MAY 2, 1906.]

- 44 (1905). Golf. [Teeing ground covered with a corrugated rubber mat.] W. F. King, Bournemouth, Hampshire.
 * 54 (1905). Elastic tire. C. W. Faitoute, Summit, New Jersey.

- 174 (1905). Heel protector. A. Mallaby, Bradford, Yorkshire.
 226 (1905). Feeding appliance for animals [comprising sucking tubes or teats]. I. K. Rogers, Bath, Somerset.
 285 (1905). Means for securing rubber hoofpad in position on a horseshoe. B. P. Gray, Birmingham.
 290 (1905). Elastic tire. J. Richardson, South Park, Lincoln.
 298 (1905). Pneumatic tire. [The outer cover has an inner flap connected to one edge, which overlaps the edge of an intermediate cover of rubber.] R. W. Ferguson, West Orange, New Jersey.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MAY 9, 1906.]

- 330 (1905). India-rubber. [Rubber milk is coagulated in a rotary cylinder.] R. C. Thomson, Glasgow. (D. K. Michie, Colombo, and G. H. Gollidge, Niboda, Ceylon.)
 *420 (1905). Horseshoe. H. Bartley, Pittsburgh, Pennsylvania.
 486 (1905). Means for securing a rim, carrying a pneumatic tire, to the felloe of a wheel. C. B. Cave, Chesham Bois, Buckinghamshire.
 554 (1905). Inhaler for administering anaesthetics. J. E. Arnold, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MAY 16, 1906.]

- 826 (1905). Golf tee [made of rubber, having a colored tassel attached thereto to indicate any flight of the same]. E. H. Taylor, Plaxtol rectory, Sevenoaks, Kent.
 *838 (1905). Respirator. A. G. Brooks, London. (D. Craig, Boston, Massachusetts.)
 841 (1905). Pump for inflating pneumatic tires. A. A. Withers, Melbourne, Victoria.
 *867 (1905). Pneumatic tire [formed with side flanges and a thickened central portion of the base fits on a flat rim provided with grooves]. P. E. Doolittle, Toronto, Ontario.
 *868 (1905). Fountain pen. R. A. Hamilton, W. Irvine, and J. P. Lein, New York.
 981 (1905). Elastic tire [having blocks of wood arranged so as to support blocks of India-rubber arranged between side flanges]. T. Gare, New Brighton, Cheshire.
 1,085 (1905). Elastic tire. H. Torley, Oberkaufungen, near Kassel, Germany.
 1107 (1905). Device for preventing side slip. [Consists of prongs working in guides formed in rings secured to the wheel]. F. Ripley, Hanly Castle, and C. T. Santler, Malvern Link, Worcestershire.
 1125 (1905). Horseshoe [provided with a metal plate to prevent the rubber pad from being pressed into the hoof and also to protect the hoof from nails and glass]. A. Förster, Heudeber, near Halberstadt, Germany.
 1155 (1905). Football boot. R. J. G. Smithson, Sunderland.
 1206 (1905). Pneumatic tire. [To prevent slipping wedge shoes are secured to the rim.] P. G. Hedges, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MAY, 23, 1906.]

- 1293 (1905). Heel protector. J. B. McCubbin, Victoria, Australia.
 *1322 (1905). Cover for pneumatic tire [composed of leather]. F. W. Howorth, London. (R. Healy, Brooklyn, New York.)
 1345 (1905). Means for forcing rubber tires into the metal rims of carriage wheels. C. H. Dyche and F. Pym, Cookham, Berkshire.
 *1390 (1905). Vehicle wheel. [For securing an elastic tire to a rim the tire is molded around perforated securing plates attached to the rim]. P. A. Newton, London. (Noiseless Car and Car Wheel Co., New York.)
 1409 (1905). Cow milker [having soft rubber coverings]. B. Ljungstrom and F. Ljungstrom, Stockholm, Sweden.
 1412 (1905). Heel protector. J. E. Davidson, Toronto, Canada.
 1477 (1905). Puncture preventing device for pneumatic tire [consisting of a flattened band of steel formed with beaded edges]. H. J. Edis, London.
 *1550 (1905). Elastic fabric [made of metal shavings and rubber for use in making mats]. F. G. Walker, Liverpool. (C. H. Prindville, Chicago, Illinois.)
 1601 (1905). Means for attaching tires to rims of wheels. H. Spurrier, Leyland, Lancashire.
 1608 (1905). Pneumatic tire [formed in sections and secured to the felloe by bolts and formed with hollowed ends which abut on inflation]. J. H. Hammond, C. T. Mason, and S. R. Brown, Leicester.
 1663 (1905). Means for preventing puncture and skidding of tires. G. J. Stevens, and W. E. Richards, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION.)

- 359,078 (Nov. 3, 1905). H. C. Tavernier. Tire and rim.
 359,095 (Nov. 3). J. C. Cole. Method of fastening tires.
 359,158 (Nov. 4). Buchillet et Cie. Skid tread.
 359,183 (Nov. 6). Lesage. Elastic material, and certain uses of it.
 359,243 (Nov. 8). W. E. Beasley. Elastic tire.
 359,256 (Nov. 9). Murphy & Manning. Protector for the head of tire.
 359,284 (Nov. 9). E. Ribeyre. Method of fastening tires.
 359,347 (Oct. 20). Lefebvre. Elastic tire.
 359,354 (Nov. 8). J. Butler. Pneumatic tire.
 359,357 (Nov. 10). G. F. de Nottbeck. Multiple inner tube.
 359,363 (Nov. 11). H. W. Southworth. Tire.
 359,404 (Nov. 13). M. Rossmann. Elastic tire.
 359,423 (Nov. 14). Fouilloy. Skid tread.
 359,443 (Nov. 14). C. Nielsen. Device for inflating tires.
 359,506 (Nov. 16). C. H. Wilkinson. Anti skid tire.
 359,518 (Nov. 17). C. E. Julien. Pneumatic tire.
 359,539 (Sept. 4). Ouradon. Metallic pneumatic tire.
 359,551 (Nov. 6). Lante della Rovere. Tire protector.
 359,608 (Nov. 18). Société pour l'exploitation du Caoutchouc au Congo. Decorticating machine for rubber vines.
 359,572 (Nov. 17). Boudieu & Bessard. Pneumatic cushion wheel.
 359,636 (Jan. 28). Samson Leather Tire Co. Method of fastening leather protectors to tires.
 359,645 (Nov. 18). F. Canihot. Tire made of cork and leather.
 359,702 (Nov. 22). J. Bessonneau. Skid tread.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Counsel, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

AMERICAN GOLF BALLS SAFE.

THERE has been some speculation as to what effect, if any, the recent adverse decision in a British court in the case of the Haskell Golf Ball Co. v. Hutchison, Main & Co., of Glasgow, would have on the golf ball trade in the United States. Under the terms of the decision, the Haskell patent is held to be invalid in Great Britain. But, of course, this could not have any direct bearing on the standing of the Haskell patent in America.

"The British decision in the golf ball case will not have any effect on the business in the United States," said the manager of this branch of A. G. Spalding & Bros.' business. "The Haskell patent is so tightly clinched in this country that nothing can disturb it. So many golf balls are made in this country, and they are sold at so low a price, that there has been no occasion to import them in any considerable quantity. Even in view of this British decision there is little likelihood that there will be any importations worth speaking about. If there was to be any increase in the amount of imports of golf balls it would be due to one of two things: because the foreign ball was better, or cheaper, than the domestic article. But neither of these conditions exists."

THE Kolonial-Handels-Adressbuch 1906—the tenth annual publication by the Kolonial Wirtsschaftlichen Komitee (Berlin)—is filled with information regarding trade conditions and general development in the German colonies, especially as promoted by the activity of the committee named, through which business men of prominence and the German government work conjointly for colonial development. A number of German rubber manufacturers are interested, and the directory of colonial enterprises embraces not a few rubber plantation companies. [8 vo. Pp. 266. Price, 1.50 mark.]

RUBBER TAPPING AND LARGE YIELDS IN CEYLON.

By Ivor Etherington (Colombo).

THE large yields of rubber produced by trees of *Hevea Brasiliensis* on some Ceylon rubber estates have caused no little surprise among rubber planters in other countries. Ceylon is ahead in the matter of cultivated rubber, and in this island enormous strides have been made during the last three years. The rubber tree, its cultivation, the methods of tapping, and the preparation of the raw article have been the subject of much experiment by numbers of planters as well as by the government scientific staff, so that it is not surprising that rapid advance has been made, that better methods of curing have been adopted, and more economical and scientific systems of tapping, and procuring larger yields of latex evolved. The turning out of machine-washed crêpe or lace rubber was not contemplated three or four years ago, when drying took a matter of some weeks. In the same way, a few years back, it was considered that the "Pará" tree could only be tapped during certain parts of the year, never when it was in the almost leafless or "wintering" stage, and wanted long periods of rest between tapping operations, while the yield of dry rubber obtained was small. To-day very different ideas hold among the majority of planters. Trees are not given such long rests as formerly, but tapping proceeds throughout the year; and larger yields are obtained in comparison with the amount of damage done to the tree.

The increased yields that have been obtained in Ceylon and the really marvelous yields obtained from some *Hevea* trees have occasioned no little surprise in Ceylon; it is therefore not strange that these results should be received with hesitation by planters of rubber in less favored parts of the world. Mr. Gordon Waldron, a rubber planter of experience in Central America, has thus challenged the truth of statements made by the present writer in THE INDIA RUBBER WORLD of January last. Mr. Waldron remarks [INDIA RUBBER WORLD March 1, page 180] that the statements referred to "are so wonderful and so important to the planting and manufacturing interests of the world as to be spurned or at once verified,

even at great expense." I will do my best to convince Mr. Waldron and other possibly justified unbelievers, of the truth of those statements. But Mr. Waldron must first recollect that these statements come from Ceylon and not from America, where "tall stories" are proverbial and everything remarkable is as a matter of course taken *cum grano salis*!

Ceylon estates are managed on very business like lines, and planters through years of tea planting, are accustomed to keeping very careful, accurate details of their plants, crops, and produce. In the case under reference a new system of tapping rubber trees was being worked out which took some years to evolve, and consequently all details were very strictly kept so as to be available for reference at any time. A planter in his estate report keeps account of what trees are tapped and the yield per day, and these results can always be verified by the visiting agent, and for the account in the January INDIA RUBBER WORLD the writer was privileged to go through the estate report very carefully and make certain extracts. The results obtained on that estate and others to be mentioned below, have been examined into by the government scientific staff members and have been accepted as correct.

But it is not only on company or private owned plantations that these large yields of rubber have been obtained. Astonishing results have been procured in the Ceylon government's Royal Botanic Gardens, at Peradeniya and Henaratgoda. These yields are vouched for by the Peradeniya scientific staff, men of the highest standing upon whose word not the slightest shadow of a doubt can be cast. The trees stand in the public garden always available for the public to see, and the daily yields when tapping is being done are most accurately kept. The yields of four of these trees are given below, and Mr. Gordon Waldron or any one else, can refer for further confirmation to the director of the botanic gardens or the controller of the experiment station, who personally carried out the work. These trees were "Brazil bred"; that is, they are some of the original plants imported into Ceylon via Kew Botanic



SPIRAL TAPPING OF "HEVEA BRASILIENSIS."

[Photograph by Mr. Etherington.]

Gardens, London, from Brazil, and are about 30 years old.

The first set of four trees were tapped with large V cuts. The yield was 11 pounds 5½ ounces, in 50 tapplings, extending over the period from June 29 to September 18, and ranging from less than 1 ounce to 14 ounces in one day. Four other trees were tapped with long spiral cuts, running round but not completely encircling the trunk. These trees yielded 17 pounds 8½ ounces rubber in 65 tapplings, extending from June 16 to September 18, and ranging from under 1 ounce to 13½ ounces in one day. That is an average of 4 pounds rubber per tree in three months.

Mr. Herbert Wright, controller of the government experiment stations, an authority on rubber in Ceylon, has lately published an exhaustive work on rubber cultivation, entitled "*Hevea Brasiliensis* or Pará Rubber", and he says the yield in Ceylon varies "to a maximum of 25 pounds per tree in twelve months' tapping." As he is the recognized authority in Ceylon the Editor will allow me to give a few lines of quotations here. Mr. Wright further says:

In the Matale district there are estates where an average yield of ¼ of a pound of dry rubber, per tree, from 5000 trees has been obtained in one month's tapping. Another estate has obtained an average yield of 3½ pounds dry rubber per tree, from 311 trees in one year. The age of these trees varied from 10 to 15 years and the trees varied in circumference from 30 to 70 inches, at a yard from the ground. These trees were tapped on the full herring bone system; the tapping area covered half the tree and extended from the base to a height of 7 feet. The tapping was done very carefully, the distance of 7 feet being worked through in 240 days of continuous tapping. The yield from these particular trees will probably be increased by a change in the method of tapping and tapping instruments during the current year.

Here then it is seen that even these good yields are expected to be surpassed when the more modern tapping system is started (the italics are mine).

These results were obtained in plantations of medium elevation, while the results mentioned in the article in January INDIA RUBBER WORLD were from estates in the low country, practically at sea level, in the Southern province of Ceylon. Of another estate in this Southern province, Wright says:

An average of 2 pounds per tree from each of about 10,000 trees is expected during the current year. There are on this estate 4 old trees which have given 10 to 25 pounds of dry rubber, per tree, in twelve months; the trees are perfectly healthy, have given a good crop of sound seed, and are now ready for further tapping.

Further exceptional yields were recorded some time ago on the famous Culloden estate in the Ceylon low country, where four large trees from 20 to 25 years of age (exact age unknown) gave respectively 10 pounds, 18 pounds, 23 pounds, and 25 pounds in 12 months. All these big yields are well authenticated in Ceylon. But it must be remembered that these very large yields are not over large acreages; they are regarded in Ceylon as very exceptional yields. It would be quite impossible to take any of these as averages; and there are no estates where these big trees yielding immense quantities of rubber are to be found in any number; but these results show what the *Hevea* tree can yield if properly tapped and if there is labor available to do the tapping. On Kepitigalla estate, described in the January INDIA RUBBER WORLD, a yield of 3 pounds per tree was got from some 10,000 trees planted through the cocoa, 8 to 15 years old, and tapped on the V system, not on the spiral or herring bone, which have accounted for the large yields recorded in the same article.

Mr. Gordon Waldron in his letter to THE INDIA RUBBER WORLD says: "I had thought that planted rubber was not likely to be felt in the markets for 25 years, and that with the gradual exhaustion of the wild rubber field and the rise of wages in the tropics, which is sure to come, a rubber famine was surely approaching." The exhaustion of wild rubber must not be counted on too freely by planters. There are large tracts in South America as yet hardly touched, and better methods of collecting and improved means of transport will no doubt encourage and improve the South American output and tend to stop the exhaustion. Your correspondent also seems to underestimate the extent of land being planted up with rubber in Ceylon, the Malay peninsula, southern India, Java, Borneo, etc. The exports of plantation rubber from the East are doubling annually, and in the words of Dr Willis, director of the Royal Botanic Gardens, Ceylon, "will in about 7 years' time, probably reach 10,000,000 to 15,000,000 pounds, and increase rapidly after that, in fifteen years from now probably exceeding the exports of Brazil."

The method of tapping used for *Hevea* may not be the correct one for economically obtaining the latex from the *Castilloa* tree, since the laticiferous systems of these two trees differ very greatly. Mr. Waldron states that in three essentials the Ceylon tapping described differs from his system: (1) frequency of tapping; (2) reopening of cuts; (3) pricking the wounds. On these three conditions depends the large yield referred to, and it is probable that such great yields can be obtained by no other tapping system yet practiced. But whether these systems can be worked successfully on the *Castilloa* tree remains to be seen, and extensive and careful experiments might well be carried out.

Tapping apparently does not harm the tree from the amount of latex drawn, but from the amount of cortex cut away; so that the finer the paring of bark removed, the better. If a large amount of latex is extracted by the removal of a very little bark, that system is economic, and in the paring and pricking methods in the spiral, and especially in the herring bone system this is the case. Owing to the difference in the laticiferous systems of *Hevea* and *Castilloa*, I believe a single cut in the latter drains a much larger area than in the *Hevea*, so that reparing or shaving the lower edge of the cut might not prove successful. The incisive method of extracting latex, as in pricking the wound, does not necessitate the removal of bark, and provided the spur tool used is handled carefully, so as not to damage the cambium, this seems an economic method; and in experiments in Ceylon which have shown capital results the pricker is used perhaps twice to each paring or shaving cut, so that an abundant flow of latex is obtained with a very slow removal of bark. An illustration accompanying these notes was specially made to show the appearance of a tree after it had been tapped on the paring and pricking system. The specimen shown is growing in the Ceylon Royal Botanic Gardens, is about 29 years old, about 80 feet in height and girthing over 80 inches at 3 feet from the ground. The tree was "resting" when the photograph was taken.

On page 80 of the March INDIA RUBBER WORLD appears a picture of "Overtapped Pará Rubber Trees" which is a striking illustration of how *not* to tap the *Hevea* tree, and

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proof of the want of a systematic method such as the spiral or herring bone. The trunk always swells and increases rapidly in girth where tapped, so that a systematic tapping, to induce regular and systematic increase in girth, is advisable.

Mr. Waldron has apparently a large number of *Castilloa* trees at his disposal and could easily carry out a series of experiments with the various tapping systems, repairing and pricking, etc., keeping the results carefully. The publication of these would be very useful to rubber planters.

A SIMPLE TIRE VULCANIZER.

THE White steam tire vulcanizer is probably too well known to the trade to need much of a description here; though the Williams patent cooling chamber attachment for this vulcanizer is probably new to some of our readers. This vulcanizer will bake 15 tires at one run, the hollow-backed molds being heated to the required temperature by a jet of live steam let into the steam chamber in each half of the mold. As ordinarily used, one can make tires of any length, reeling them up to 500 feet or more, by baking a section at a time, uniting the uncured ends, or else by rolling out the plastic rubber in endless ropes, simply slipping through the mold after each cure. The ends could not be united, however, when one of the pieces had been vulcanized; so the White vulcanizer is now made with a cooling



WILLIAMS PATENT COOLING CHAMBER ATTACHMENT.

chamber at each end. The ends of the tires which lie between these coolers are not vulcanized, so that a true union can be made between these ends and the unvulcanized lengths to be at the next run. If only single lengths are desired, steam can be let into the cooling chambers also, making an entire vulcanizer. This vulcanizer is mainly used for buggy tires, is very simple and convenient, takes up little room, and prevents the great waste of steam which ordinarily occurs from emptying a converter every 30 or 40 minutes. [The Williams Foundry and Machine Co., Akron, Ohio.]

THE Rhode Island commissioner of industrial statistics presents comparative statistics of a number of factories for 1900 and 1904, including 4 rubber factories (not named, of course). These latter show practically no increase in the number of employes, but an increase in average yearly earnings from \$354.53 to \$423.44. The total value of output of the 4 factories increased by 7.9 per cent.

THE I. B. Kleinert Rubber Co. (New York) have appointed as their representative in Great Britain Mr. R. E. Wright, long identified with their European business, in succession to the late Mr. H. T. Hobart.

MR. A. D. THORNTON.

IN Curdworth, Warwickshire, England, in 1869, Mr. A. D. Thornton made his bow to the world. In 1893 he came to Canada bent upon success, shortly following which advent he was introduced to the rubber trade by Mr. H. C. Burton, now of New York, but then manager of the Alpha



Rubber Co., of Montreal, in which employ Mr. Thornton was engaged as a traveling salesman; selling druggists' sundries and mechanical rubber goods. In 1896 the Alpha company became absorbed by the Canadian Rubber Co., of Montreal, whose general manager then was Mr. J. J. McGill. With this transfer of business went Mr. Thornton, and very soon fol-

lowing this, he was assigned to the mill where he installed a chemical laboratory, which was exclusively operated by him for two years, during which he constantly made analyses of the 300 odd compounds then operated by the company, personally superintending the mixing of all these during that period. This was the foundation of Mr. Thornton's education in the depths of the rubber interest, which has made him a recognized authority on all features of the business from the inception of manufacture to successful application of the products in service. The Canadian Rubber Co.'s business is classified into two distinctive divisions, viz.: the "Shoe Department" and the "General Rubber Goods Department." In the latter there is manufactured perhaps a larger variety of goods than in any other rubber plant on this continent, and with all of which Mr. Thornton is familiar. In 1898 Mr. Thornton was changed to the superintendency of the mill room of the shoe department, which he systematized and put in a satisfactory running basis. Following this he also took over the management of the wash house, reclaiming, and the manufacture of various cements and varnishes that the Canadian Rubber Co. produce. Meanwhile Mr. Thornton was engaged in the study of crude rubber, as a result of which, for a long time his selection has decided the company's purchases of rubber. In 1901 Mr. Thornton was given the responsibilities of costs, compounding methods, make-ups, cure, etc., of the whole manufacturing interests. Upon the advent of Mr. D. Lorne McGibbon as general manager, in January, 1903, Mr. Thornton was appointed superintendent of the general rubber goods factory, and later general superintendent of the entire plant. With the continued growth of the company's business, of late Mr. Thornton's time has grown into his recently changed position of general technical superintendent, though he still personally superintends crude rubber, reclaiming and cements.

A STANDARD FOR RUBBER COVERED WIRES.

IN a paper on Standardizing Rubber Covered Wires and Cables, by Mr. John Langan,* it is pointed out that the really vital point in all tests of such cables is to make sure of the rubber in the insulation. The writer presents some specifications and tests for wires and cables, based upon general principles which are summarized briefly herewith.

A badly insulated wire or cable will imperil the success of any system. Not only must the insulation itself be perfect; it must be properly tested, installed, and protected. Cables, some appear to think, are all alike. If they are only of copper, rubber covered cables are called for and purchased by some people with no other requirement than that they conform to the rules of some "code," and it all goes as "rubber covered," even if the compound be of cheap rubber substitutes. Such insulation cannot last long, since, possessing no vitality, it soon falls prey to variations of temperature and climatic conditions.

The fault here indicated lies not with the manufacturer, but with the rules, which impose no provision as to quality. All they require is a certain diameter of insulation. No one doubts the good intentions of the framers of these rules, but as indicating how wide of the mark they go in fulfilling any requirement of good insulation, consider what the rules say about testing wires before installation:

Each foot of the completed covering must show a dielectric strength sufficient to resist for 5 minutes the application of 3000 volts per $\frac{1}{8}$ of an inch thickness of insulation.

This would require a conductor with $\frac{1}{8}$ inch of insulation to stand a test of 60,000 volts—something impossible with the best Pará, much less with the cheap rubbish employed on some wire. But supposing it possible, who is to enforce the rule? Some of the larger users of cables, especially near the wire factories, send competent engineers to make tests at the works, but this is not always practicable, and wires are delivered and go into use without any tests except measurements. But nothing can be more misleading than to adopt the voltage test alone in determining dielectric efficiency.

What constitutes good insulation, and how can it be known? The consensus of opinion is that India-rubber is the best of all insulating materials. But rubber of itself is valueless as an insulating medium. Its tendency to oxidize is a feature of disintegration which precludes its use alone for this purpose. But in conjunction with other ingredients, and when vulcanized, it becomes absolutely waterproof and practically indestructible. It does not matter how good the rubber is, if it is not properly vulcanized.

There are many different grades of rubber. Chemically, they are distinguished by the amount of their resinous contents, and physically by their tensile strength. Both properties are closely related, for rubber which is chemically poor is also physically weak. The chemical test affords the reason for the high regard in which Pará rubber is held.

Now since good rubber is in itself very strong and very

elastic, these characteristics should be present in any insulated wire in proportion to the amount of rubber in the insulation. But this is not all; the immense influence exerted by vulcanization must be considered. Over vulcanized rubber will become hard and brittle; if under vulcanized, it becomes brittle and inert, and in either case the insulation will not meet the requirements of a tensile test. Good insulation is clearly indicated by its prompt return after being stretched several times to, say, three or four times its length, which, roughly speaking, implies a tensile strain of not less than 800 pounds to the square inch.

It has been proved repeatedly that where there is 30 per cent. of fine Pará rubber in the insulation, this physical test is easily obtained. But a combination of a lesser amount of Pará and a large amount of a cheaper rubber will initially, at any rate, produce the same test as 30 per cent. of fine Pará. Analysis of insulation compounds which gave a satisfactory test showed them to contain 15 per cent. of Pará and 30 per cent. of cheaper rubber. In other words, it takes 45 to 50 per cent. of a cheaper combination of rubber to do what 30 per cent. of Pará would do.

It will be seen from the above that while the physical test is effective to a certain extent, it does not compel the use of fine Pará. It is only by means of chemical tests that the percentage of resinous content can be ascertained. The best grade of rubber has hardly more than 1 per cent. of resin, while some others contain as high as 20 per cent. But insulation containing 30 per cent. of fine Pará may have from 3 to 5 per cent. of resin. This is because during vulcanization, for reasons not fully understood, the amount of resin in fine Pará increases to about 3 per cent., besides which the addition of some extractive matter to this normal amount is considered by the manufacturers a good thing for the insulation. But the total in the completed or braided wire should never exceed 5 per cent.; for beyond this limit the chemist cannot differentiate the grade of the rubber, and thus the value of the analysis is compromised. For this reason, tests should be made in the completed wire, rather than on the unfinished sample.

Referring to the unreliability of the voltage test the writer points out that certain oils will stand extremely high pressures, which shows why cheap compounds may stand very high initial tests and yet in a short time break down in actual service. The reason is that such oils, incorporated in a compound, soon evaporate, when the temporary virtues they possess disappear also and the insulation falls into decay. As a criterion of merit it is pointed out that a high insulation resistance is immeasurably better. At any rate this much is certain, that in insulating compounds having 30 per cent. fine Pará there is always associated with them a very high insulation resistance, whereas in cheap compounds the reverse is equally evident. A high insulation test should, therefore, wherever possible, always supplement a physical test, as it tends to elevate the grade of the compound. When a chemical analysis is contemplated the necessity for this is not so obvious; but where it is not the two, if associated, will produce the most satisfactory results.

* Presented at the 26th meeting of the American Institute of Electrical Engineers, New York.

"THE STURGEON RUBBER CO."

TO THE EDITOR OF THE INDIA RUBBER WORLD: Referring to my letter to the New York *Tribune* about the rubber producing goat, which was copied in your issue of April 1, although it is of great scientific interest, it does not appeal to Americans, like the "rabbit weed" of Colorado, as a new source of supply, but now comes another discovery in the West, which bids fair to revolutionize the entire rubber industry.

Readers of Parkman's histories will remember that when DeSoto, in 1542, and LaSalle, in 1682, explored the Mississippi, they noticed that the ends of the Indian canoes were fitted with elastic bumpers or shock absorbers, about 6 inches in diameter, formed by binding together a number of pieces of elastic substances about the size of a hen's egg, and in the Jesuit relations of Fathers Marquette and Hennepin the matter is again referred to, and one of the canoes now being in the Museum of the Chicago University, Professor Damsell, of the Polytechnic College of Terre Haute, Indiana, the greatest living ichthyologist, had his attention called to it. On examining these buffers he found they were made up of the cartilaginous ends of the snouts of the *Acipenser rubicundus*, or common lake and river sturgeon, which has all the properties of rubber and which many years ago was much used by boys for the center of their balls, to make them bound well.

The professor, having a strong commercial instinct, went at once to Akron, Ohio, and communicated his wonderful discovery to prominent rubber manufacturers there, and they engaged him to make further investigations, advising him to go to Sandusky, which is the center of the sturgeon trade, large quantities of *caviar* being there packed and exported to Russia. Professor Damsell found that it would be necessary in some way to vulcanize the product, and it occurred to him to bring the fish itself to his aid. He therefore obtained a boat load of iron pyrites and had it thrown overboard into Sandusky harbor, and the sturgeon immediately gulped it down with great avidity, it seeming to be just what their systems required—the iron to enrich their blood and flesh and the sulphur to increase the size and actually vulcanize the ends of their snouts—so that in about sixty days they were 3 inches in diameter and commenced to dry up at their base and hang by a small ligament, like a wart or toadstool, and the sulphurated hydrogen given off so choked the fish that they gave a violent sneeze, which threw off the balls, which rose to the surface of the water where boatmen gathered them up and shipped a carload to Akron, where they were found to be equal to Pará rubber.

Steps were at once taken to form the National Sturgeon Rubber Co., and the member of Congress from that district was requested to ask the government to make an adequate appropriation to aid and stimulate the new "infant industry," statistics being sent on to show that each female sturgeon's roe contained a million eggs, and that it would require to start with only 65,000,000 sturgeon to produce 65,000,000 pounds of rubber. (In other words, about the amount that was imported last year, at a cost of about 75 cents per pound, or \$50,000,000.)

Furthermore, the statistical petition went on to show that if each egg of the number produced by 65,000,000 sturgeon produced a living fish that it would require the whole of

Lake Erie to hold them and that it would reduce the price of rubber to less than 3 cents per pound, making it so cheap that all the streets of the principal cities could be paved with it, the same as the driveway and court of the Savoy Hotel in London; again, traffic on the elevated and street car lines could be made absolutely noiseless by using rubber sleepers, and in fact the whole railroad system of the United States could be equipped with rubber ties at a great saving in cost as well as a great comfort to travelers.

Again, the cheapness of rubber might lead it to become a great earthquake eradicator, as the Kansas City *Times* has just reported the formation of the American Rubber Tube and Building Co., who propose equipping water departments in all the large cities with rubber water mains, as earthquakes cannot injure them, and freezing cannot burst them, as being pliable they give room for expansion, and furthermore to prevent any of the great buildings from falling on the water mains and choking off the supply of water, the company is perfecting plans for rubber construction in all skyscrapers, so if an earthquake should topple them over they will immediately bounce back into place.

We may here mention a fact not generally known and one which seems to be a wise provision of nature, that when the sturgeon's snout is removed it is quickly renewed, the same as the claws of the lobster and other crustacea.

Again, it is the habit of the sturgeon at dusk to leap completely out of the water, and it is a sight well worth seeing, and it is beautifully described by Joseph Rodman Drake in the "Culprit Fay":

With sweeping tail and quivering fin
Through the wave the sturgeon flew,
And, like the heaven-shot javelin,
He sprang above the waters blue,
Instant as the star fall light
He plunged him in the deep again,
But left an arch of silver bright,
The rainbow of the moon's main.

FITZ NIGEL.

New York, May 16, 1906.

SOME WANTS OF THE TRADE.

[340] FROM England: "On page 231 of your issue for April 1 there is an interesting paragraph regarding the cutting of forest trees by means of a saw operated by compressed air. We should be pleased to learn how to secure the apparatus."

[341] A jobber writes: "Can you tell me who manufactures the Sutlive pillow ventilators?"

[342] A New York firm of commission merchants sends an inquiry in relation to bifurcated rivets, and where they are to be obtained.

[343] From Chicago: "We are in need of a small vulcanizer for laboratory rubber uses. Do you know of any manufacturer who turns out such requirements?"

THAT Mr. F. N. Hamerstrom is making so good a recovery from appendicitis at the Medico-Chirurgical Hospital, Philadelphia, is a source of much gratification to his many friends and acquaintances as well as to his immediate business associates at the Trenton Rubber Manufacturing Co. (Trenton, New Jersey), where he is the general manager.

SOME NEW TIRE FEATURES.

THE latest departure in pneumatics has been the construction of a set for a motor omnibus, the new type of vehicle which recently has become so popular in London. Until now it has been considered impracticable to produce pneumatics of such large size, but the demand exists—at least in the desire of the omnibus owners for whatever



DALILA TREAD.

equipment will tend to decrease the wear and tear of their vehicles. The most notable thing about the new tires, apart from their size, is the number of plies of canvas used in the treads. The size is $40\frac{3}{4} \times 6\frac{1}{2}$ inches, and the weight of the cover alone is 85 pounds. The latter, by the way, is fitted with case hardened studs on the tread. It remains to be seen whether the results attained will be commensurate with the heavy cost of these tires—a figure which has not yet been made public.

* * *

AMONG the devices which have been brought out lately in the French trade in the line of tire protectors is the "Neron," which consists of a layer of light steel chains, laid parallel and touching, between the inner tube and the shoe. These chains are laid in rubber, and enclosed between layers of canvas, and the whole then vulcanized, making a smooth, endless band, which is also flexible. Besides protecting the tube from puncture, this shield also tends to prevent blow outs, unless the shoe is torn wide open.

The French tire protector known as the "Cromwel" is of the anti skidding type. It is made of numerous cross strips or segments of rubber, plentifully studded, the ends bearing hooks which grip the tire rim. The tread, when mounted, presents an odd appearance, the overlapping cross



CHAMEROY TREAD.

strips having been compared to the scales on the underside of a snake. The tread is mentioned as being easily attached or detached, when the tire is inflated. The rivets penetrating both thicknesses of the rubber, where the lap occurs, the separate pieces are firmly joined into one whole.

The "Genard" is another French tire tread made of overlapping strips, but in this case the strips are made of leather and riveted upon a leather band. The projecting rivet heads prevent skidding. The flap of each strip extends well forward, so as to prevent the entrance of water about the tire. The tread covers the whole tire and, being laced on, presents a neat appearance.

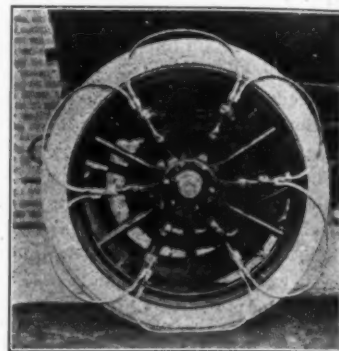
The "Dalila" is also a skid tread, consisting of a specially prepared overshoe of strong chrome leather, around the tread of which is riveted a sole of extra strong chrome

leather, steel studded. The tread is held on by the customary clips, which grip the clinches, put on when the tire is deflated.

In the "Chameroy" tread, a flexible steel band encircles the tire two or three times, and is riveted to the tire. Upon this band are fastened cross strips of tempered steel, near enough to each other to touch, and with the ends bent up and tucked under the steel band. Between the shoe and the tube is a double layer of cloth, to protect the tube from heat and rivet chafing.

* * *

To turn now from French productions, mention will be made of the "Eyre" anti skid, which is of English origin. This consists of an ingenious arrangement of springs which are adjusted to the outer surfaces of the driving wheels of motor cars. These springs are adjustable, and can be put into or out of operation almost in a moment. An accompanying cut will show how the springs are attached, and how they appear when in use.



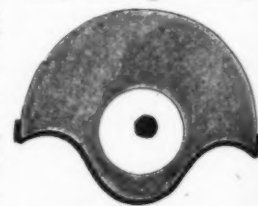
THE EYRE ANTI SKID.

* * *

CUSHION tires are still in demand in not a few places, chiefly because of their being less liable to puncture than pneumatics, while possessing more resiliency than solid tires. The illustration herewith of Kretzschmar's cushion tire, made by a leading German rubber firm, relates to a type which is used extensively on the postmen's tricycles in vogue in that country. It is recommended also for military cycles and might be used by tourists on hard trips. The tire is made with either round or pointed tread, and is said to be more elastic than the cushion tire of circular section.

* * *

THE "twin" form of solid tire, first introduced in England, is making headway wherever tires are demanded for specially heavy vehicles. Of late they have been applied to a number of the observation cars, or "sight seeing" buses of which so many are employed on the streets of New York, and with such results as to point to the ultimate use of "twin" tires exclusively where the weight of the vehicle calls for tires of more than a certain width—say 5 inches.



A GERMAN CUSHION TIRE.

In this connection may be mentioned the Wire Mesh Base Endless Tire, made by The Diamond Rubber Co. (Akron, Ohio), a twin tire in which the base is made of much stiffer rubber than the tread. In this base the wire mesh or woven wire is embedded, encircling the tire several times, adding greatly to its retaining power. The tire being slightly wider than the rim, the stiff base is tightly clamped in the channel, which serves to preclude creeping.

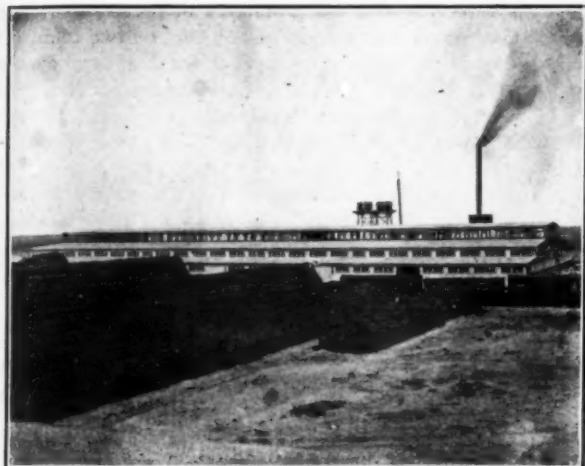
THE GUAYULE FACTORIES OF MEXICO.

THE rubber interests in Mexico have, during the last year, centered very largely in the producing portion, which is, strange to say, the alkali uplands, situated in and about Torreon. When, many years ago, a carload of a dry appearing shrub was brought to New

illustrations of a Guayule factory and facts concerning the Mexican output.

The largest factory in the world for the extraction of crude rubber is located at Torreon and is a steel frame building, roofed with corrugated iron, its dimensions being 198×396 feet. Two of the illustrations in this article picture the building, one of them showing huge piles of Guayule shrub in the form of bales—a bulk larger than that of the factory itself.

Exactly what the product of this factory would be, running night and day, it is difficult to say, but during the month of May, 1906, it turned out 300,000 pounds, all of which was purchased by American manufacturers. The same company—the Continental Rubber Co.—have another factory at Saltillo which is not running at the moment of this writing because it is shut down for the installation of a new engine. This has a capacity of two tons of finished material a day. A third factory is located at Ocampo, about 150 miles north of Torreon, and right in the middle of the Guayule fields, which has also a product of two tons a day. This has been running night and day since November, the product going to the European market.



SIX MONTHS AFTER LAND PURCHASE.
[Factory of Continental Rubber Co.]

York that rubber might be extracted from it, much amusement on the part of the omnipresent sceptic resulted. Today that same shrub produces hundreds of thousands of pounds of excellent rubber, and great factories are running night and day for its extraction.

The rubber manufacturing trade, ever on the alert for something new and yet ever fearful of costly mistakes, has naturally been somewhat doubtful of the size or the permanence of this source of rubber. It is therefore with much pleasure that THE INDIA RUBBER WORLD is able to give



PILE OF GUAYULE SHRUBS AT TORREON FACTORY.

Whether the shrub is susceptible of cultivation no one pretends to know. That it is self propagating and within five years renews itself is well established. At all events there is enough shrub in sight to warrant the continuance of the business for years to come, and further than this, the company to whom is due the credit for giving this new rubber world is perfectly willing to guarantee shipments for any period that the manufacturer may elect.

As has already been mentioned, the last year saw a product of something like a million pounds. It is also as a matter of common knowledge that one large rubber company, after using Guayule for a year and a half has contracted for a supply of it for the coming year of between 600,000 and 1,000,000 pounds. Their past consumption of Guayule, several hundred thousand pounds, resulted in not a single complaint from the purchasers of their goods. The largest producers of mechanical rubber goods and footwear in the United States have also contracted for many hundred thousands of pounds of Guayule for the year to come.



END VIEW OF TORREON FACTORY.
[Continental Rubber Co.]

In speaking of Guayule as rubber, the writer, aware that some manufacturers class it as a substitute, still holds that it is a rubber, and a good one, and one that has a definite place in general rubber manufacture. To be sure it must be handled with wisdom; it should be washed thoroughly, sheeted thin, and used as soon as dry. If not, that is, if it hangs in the drying room too long, it becomes soft. Used wisely there is no doubt but it can displace higher priced rubbers without the slightest danger to the goods.

The present grade of Guayule, while showing wonderful improvement over those first put on the market, will undoubtedly be succeeded by even better. The softness which it possesses is of course due to the large percentage of resin in it, normally about 21 per cent. Some of the most experi-

The facts here cited have been carefully verified by the Editor of THE INDIA RUBBER WORLD and are given wholly as a matter of interest to rubber manufacturers.

PROMOTOR BORGES CONVICTED.

A VERDICT of guilty was rendered by a jury in the Boston superior criminal court on June 9, against Ferdinand E. Borges, who had been on trial since May 14 on charges connected with the promotion of the Ubero rubber plantation companies. Borges was on trial on two counts of conspiracy (with William D. Owen) to steal, and 126 counts of larceny. The jury failed to reach an agreement in regard to one conspiracy count and 53 charges of larceny, all connected with the Ubero Plantation Co. of Boston. The conviction was on the charge of conspiracy and 73 counts of larceny based upon the securing of investments in the Consolidated Ubero Plantations Co. by alleged false representations. Speaking generally, the jury were unable to agree that Borges had been guilty of conspiracy or larceny in his company promotion before the formation of the Consolidated company. It has been figured out that if the maximum sentence were imposed in each case the aggregate would be more than 200 years imprisonment. Counsel for Borges were given until June 30 to file exceptions. Counsel said that undoubtedly the case would be carried to the supreme court. Borges had been confined in jail for over seven months, in default of \$75,000 bail.

The troubles of the Ubero plantation companies have been reported in detail in THE INDIA RUBBER WORLD. The history of these organizations was given in our issue of May 1, 1905 (page 278). About that time much dissatisfaction began to be expressed by investors in regard to the management of the companies, and various investigations were set on foot, which resulted in indicating that little of the money invested had been devoted to the development of the plantations, but that it had been appropriated to the personal use of the promoters. Proceedings were instituted for placing the Ubero companies in the hands of receivers, and criminal proceedings were brought by a number of investors against Borges, who had been active in securing money from the public at the Boston office, and William D. Owen, a former member of Congress, who had been chiefly instrumental in organizing the companies. Owen has been in Europe since the first exposure of the frauds, beyond the reach of any legal service.

This is the second case in which a conviction has been had in the United States in connection with fraudulent practices in the promotion of rubber plantation companies. Frank B. Bittinger was arrested February 13, 1903, on a charge of the fraudulent use of the mails in promoting the Nicaragua Co., which purported to be forming a rubber plantation in Nicaragua, and had headquarters at Dayton, Ohio. He was indicted November 5, 1903, in the United States court at Chicago, and on December 10 sentenced to spend one year and a day in jail, and to pay a fine of \$1000.

SARAWAK (Borneo) imposes an export duty on Gutta-percha of 10 per cent. *ad valorem*; on Gutta-jelutong (Pontianak gum) of 60 cents (silver) 1 per pikul [=133½ pounds]; and on India-rubber, \$10 per pikul.



GATHERING GUAYULE SHRUBS.

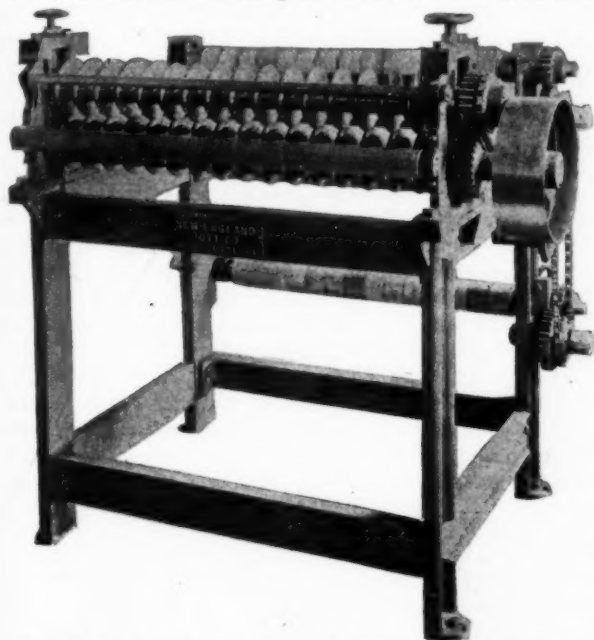
[Type of wagon in which Guayule is hauled; also general character of the country and size of plants in foreground.]

enced chemists in the country have been at work for months experimenting on practical processes for removing all or a part of this resin. They have succeeded in extracting two-thirds of the resin content, leaving the rubber so near like a high grade of Panama that it would be difficult to tell the difference. This deresinated rubber is not yet on the market, but will be eventually and should find a place for itself.

It must not be thought, however, that the presence of resin is always detrimental. One has only to remember that in certain compounds resin is added, to prove this. It is therefore a question if the present grade of Guayule at its low price is not for many purposes a better bargain for the manufacturer than would be a deresinated Guayule at a much higher price.

STRIP CUTTING MACHINE.

INDIA-RUBBER, with or without a backing of fabric, is often required in long strips. As it comes from the calender in sheets from 36 inches up to widths that only the largest calender can handle, it follows that to cut this sheet longitudinally into strips from $\frac{1}{4}$ to 3 inches wide, an accessory machine is needed. Hence the Strip Cutter. It is simple, and of course effective; made up of a series of sharp, rotary knives that revolve against a steel roll. Between the



roll and the knives the sheet of rubber or rubber coated fabric is led, and the strips cut at a speed that is marvelous. The knives are so arranged that they can be set at varying distances apart and the machine equipped with various starting, stopping, and speed regulating devices that need no specific description. [The New England Butt Co., Providence, Rhode Island.]

A CABLE LAYING MACHINE.

THE signal service of the United States government has purchased a submarine-cable laying machine made by Johnson & Philips, Limited, (Old Charlton, Kent, England), which is thus described in an exchange:

The machine consists essentially of a drum, round which the cable to be laid takes three or four turns. This drum can be driven by a small steam engine, the valves of which are controlled from the same platform as the brakes and tail-gear. The engine drives the drum by means of a pinion, which can be moved out of gear when the cable is being laid in deep water, in which case the weight is sufficient to drive the drum against the resistance of its brakes. Previous to passing round this main drum the cable passes over a tailgear, which maintains a constant pull on it, and thus ensures that it takes a firm grip of the main drum. This gear is fitted with a brake, by which the amount of tension can be adjusted. In lifting a cable it is, of course, es-

sential that this tailgear shall have a positive drive, and this is provided for by means of a Renold chain drive, one sprocket of which is keyed to a spindle carrying a sliding pinion, which can, when desired, be thrown into gear with the main drum. This chain drives the tailgear through a friction clutch, so that the gear can yield to sudden strains. In anything but a smooth sea, it is necessary to adjust the brakes on the main drum and tailgear with the motion of the vessel, since, if either brake wheel stops for an instant following the pitching of the vessel, it is liable to "seize," since the friction "of rest" is, of course, considerably greater than the friction of motion. Provision is therefore made for tightening this brake from the working platform. Twin machines are usually fitted, being required in splicing a cable; one machine can then haul in one end, whilst the other pays out. The machine is designed to carry a load of 25 tons.

BICYCLE TIRES IN ENGLAND.

IN an article on light weight bicycles, in London *Financial News*, the writer says it is impossible to have these without light tires. "The days have gone," he says, "when economical riders ordered tandem tires for their back wheels, in the hope of escaping punctures. It is now recognized that the side walls of a tire must be thin. If decent road surfaces could be counted upon everywhere, the tread might be thin also, as the gain in comfort and speed would be great. But a thin tread, even if composed of the purest material, must puncture on occasion, and therefore prudent riders usually have a strip of compressed rubber added to the tread of a light tire. Four years' experience of fabric-sided tires has convinced the writer that the actual road wear on the rubber treads is almost negligible. It is the fabric which ultimately gives out, owing to the ravage caused when riding through stretches of loose road-metal. The rider frequently escapes trouble, and passes unscathed through most puncturesome country, but afterwards discovers the injuries to his open sides."

On account of the continued popularity of cycling in Great Britain, the demand for bicycle tires is still an important item in the rubber trade: *Financial News* mentions the use of bicycles on a wide scale by the postoffice department, both by letter carriers and in the delivery of telegrams, which is a government function. "In rural districts the cycle mounted policeman, in the full dignity of helmet and tunic, is becoming a familiar feature."

A GRINDER FOR SCRAP RUBBER.

THE Birmingham Iron Foundry (Derby, Connecticut) have just put upon the market a double geared grinder refiner designed for pulverized scrap rubber. They have just put one in the Goodyear Tire and Rubber Co., in Akron, and it is doing a remarkable amount of work. The machine is described as follows: It is a 22" and 24" \times 60" chilled milled, double geared, giving a total friction of $2\frac{1}{2}$ to 1, the fast roll running 20 $\frac{1}{2}$ R.P.M. It is designed primarily for reclaiming mill work in grinding and pulverizing scrap rubber, and should handle from 6000 to 8000 pounds per day of 10 hours. The machine is readily equipped with adjustable guides, any type of bedplate, and if requested a safety stop device. The total weight of the machine is 50,000 pounds.

RUBBER INTERESTS IN EUROPE.

A HISTORY OF THE TRAUN RUBBER WORKS.

FOLLOWING the fiftieth anniversary of the firm of Dr. Heinr. Traun & Söhne, formerly the Harburger Gummi-Kamm Compagnie, of Hamburg, they have issued a handsome brochure outlining the history of the firm and their works, illustrated with views of interiors of the various departments, together with portraits of the heads of the firm and of the department managers. The history of this business has been fully outlined from time to time in THE INDIA RUBBER WORLD. It will be remembered that a son of the original Meyer, of Hamburg, came to New York and in conjunction with Conrad Poppenhusen acquired the first license under the Goodyear hard rubber patent and began working it at College Point, Long Island, on premises still devoted to this industry on an important scale, though the Hamburg interest is no longer represented in it. Another member of the Meyer family (L. Otto P. Meyer, still living at an advanced age in Dresden) came to College Point and vastly improved the practice in hard rubber.

The Meyer interest in 1856 introduced the new manufacture in Hamburg as the Harburger Gummi-Kamm Compagnie, in which was interested a son in law of the original Meyer, named Traun. It happened that a son of the latter was chosen to be the future head of this business, and after having received a thorough preparation—including a university training as well as a practical factory experience—Heinrich Traun became successively manager of the works in 1861, a member of the firm in 1863, and sole proprietor in 1883, the firm style remaining all the while unchanged. Later, upon the introduction of his two sons in the business, the company became Dr. Heinr. Traun & Söhne. The active management now devolves upon the sons, Dr. Traun devoting his time to his duties as a senator of the free city of Hamburg. The book here referred to, in addition to sketching in detail the history of the business and giving an idea of character of the goods manufactured, mentions the interest which Dr. Traun has at all times shown in the subject of the sources of rubber and the preparation of the raw product, as having a bearing upon the use of rubber in the factory. His investigations have been of much value to the whole rubber industry, and it may be of interest to note that much of the rubber used in the Hamburg factory has been derived from African sources controlled by Dr. Traun—it being understood, of course, that in the manufacture of hard rubber goods there are grades preferable to Pará sorts.

The book concludes with details regarding the various organizations among the work people for their social and physical benefit, to the support of which the firm contributes materially. These organizations are the outgrowth of measures for the benefit of his employes instituted by Heinrich Christian Meyer as early as 1828, on lines which have been incorporated to a certain extent in the German imperial law. The book contains photographs of groups of the firm's long service employes, showing six who have been in the company's service for fifty years and 131 for twenty-five or more years. The trade of the firm in the United States is supplied in a large measure by the products of a factory established by them some years since at College Point, New York, under the name Traun Rubber Co.

GERMANY.

THE rubber department of Asbest- und Gummiwerke Alfred Calmon A.-G. (Hamburg) continues very active—in mechanical goods, tires, and footwear—the works being operated until 8 o'clock at night. The number of workers has increased since 1900 from 85 to nearly 600, and the building of additional plant is contemplated.

=His Majesty the King of Saxony has conferred upon Herr Heinrich Brück, general director of Leipziger Gummiwaaren-Fabrik, Aktiengesellschaft, the Albert Order, first class, in recognition of his many services to industrial progress and the general good. On this date (July 1) occurs the forty-second anniversary of Herr Brück's connection with the firm.

=In a review of certain late reports regarding the United States Rubber Co., and particularly their purchase of the Atlantic Rubber Shoe Co. (owners of the Doughty patent for making footwear), *Gummi-Zeitung* (Dresden) congratulates itself upon its foresight. The shoe machine, it says, was going to revolutionize the rubber shoe industry, but "so far it has only revolutionized a number of influential capitalists." And "in any case our prophecy has been fulfilled, in the matter of the rubber shoe machine, as well as in that of the common stock of the United States Rubber Co."

A LARGE BALATA BELT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Our copy of your May 1 issue is to hand, and we notice your remarks on page 269 of the large rubber belt made by the Manhattan company. We beg to inform you that we have



A GERMAN MADE BALATA BELT.

been making 72 inch Balata belts for over a year, and our plant is capable of making them 750 feet long in one length, and also endless. We have pleasure in sending you a photograph of one of these 72 inch belts. Yours truly,

Altona near Hamburg, Germany, May 14, 1906. LOEWITZ & ROHLFS.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Akron and Barberton rubber industries were never seen to better advantage than early in June, when the Pittsburgh merchants and manufacturers who control the trade of western Pennsylvania and West Virginia came here on a visit and inspected all the rubber factories. Every plant in both of the cities is now working full time and the inspection, while it proved a treat to the visitors, had a tendency to advertise this local industry in a way never before presented. In consequence of the visit here several of the plants in both cities reported having received large orders for mechanical rubber goods and druggists' sundries.

The B. F. Goodrich Co., who have done more in the way of advertising Akron than any other plant in the city, will again introduce a novel scheme to advertise the company and incidentally advertise Akron. The local lodge of Elks is preparing to attend the national reunion of the order to be held at Denver, Colorado, in July. Each of the members going on the trip will be supplied with a large stock of rubber balloons and other rubber souvenirs which will be distributed at the convention to the delegates. Last year at Buffalo The B. F. Goodrich Co. sent with the local delegation a large number of rubber souvenirs, which proved a big drawing card for Akron and also for the company.

The city of Barberton, a suburb of Akron which has three flourishing rubber manufactories and a new reclaiming plant, believes in the policy adopted by congress, as laid down by Senator Dick, of Akron, in the building of the Panama canal, in which all the material possible is to come from the United States. Barberton councilmen believe in this policy, and to carry it out the council adopted a resolution at its latest meeting, in the matter of purchasing fire hose, that the Akron companies be given a preference over foreign companies. Many samples were submitted by foreign corporations seeking to supply hose for the fire department, but The B. F. Goodrich Co. landed the contract.

The Diamond Rubber Co. through their San Francisco agency have received word that their trademark has been registered in Japan. For several years past the company have been seeking to have their trademark registered, in Japan as they have been exporting a large amount of rubber goods to the Far East.

Mr. Frederick Clause, who has been with the Goodyear Tire and Rubber Co., has received a fine appointment—that of deputy in the prosecuting attorney's office in Summit county.

Work has been started at The B. F. Goodrich Co.'s plant for the building of another large addition to their plant. The new addition is being erected adjoining the Specialties building of the company. When completed it will be five stories high and have a width of 72 feet on Main street, on which the plant faces. The new addition will afford a floor space of 25,000 square feet, and will be devoted to general manufacturing purposes.

The Diamond Rubber Co. have acquired considerable additional land on Jackson street, adjoining their present plant. Secretary William B. Miller stated that the plans of the company have not matured as yet. It is understood, however, that they contemplate building a large addition upon the new property.

The International Automobile and Vehicle Tire Co. (Milltown, New Jersey) are making a strong bid for tire builders in Akron. The company advertise in the local newspapers that they desire young men to learn tire making. At the present time the Akron tire manufacturers are also in the field for all the tire builders available.

One of the events of the season always looked forward to by employes of The B. F. Goodrich Co. is the annual outing which is given by the company. The outing will be held on August 4 at Silver Lake, near Akron. Last year over 25,000 people attended the outing. Transportation and admissions to the grounds and privileges are furnished by the company to every employe.

David Webster Miller, father of William B. Miller, secretary of The Diamond Rubber Co., and who was also interested in the company, was instantly killed on the evening of June 10, by being struck by an automobile in Yonkers, New York. Mr. Miller was on his way home in that city and alighted from the wrong side of a street car. He stepped in front of an automobile and was knocked down. Both wheels of the car passed over his neck, breaking it. Mr. Miller was 63 years old and is survived by two sons, William B. Miller, of Akron, and Harry C. Miller, of St. Louis, and one daughter, Mrs. Arline Mills, of Yonkers. Mr. Miller was connected with the New York branch of the company.

The great demand for smoking pipes, now that pipe smoking on the streets has become a fad, has been a boon for The B. F. Goodrich Co., who manufacture vulcanized rubber pipe stems. This department is turning out between 7000 and 8000 pipe stems a day and large orders are still to be filled for different pipe manufacturers throughout the country who are rushed with orders.

The Faultless Rubber Co. are enjoying a brisk trade. A large number of orders for druggists' sundries and rubber sundries are being filled by the company and the force at the plant is being greatly enhanced.

The Diamond Rubber Co., against which suit was filed by A. E. Ellinwood, a mechanical engineer, for \$317.24 alleged to be due for making certain designs and drawing for a new cord wrapping machine, filed a motion to the suit in which the company asks that the plaintiffs be compelled to file a copy of the contract alleged to have been entered into by the company and that also state the name of officer of the company with whom the contract was entered into.

An answer was filed in the county courts at Newark, Ohio, in the suit of Frank T. Lippincott v. James F. Lingafelter *et al.*, in which the plaintiff asked for the appointment of a receiver to take charge of the assets of the Lingafelter-Lippincott Manufacturing Co., which concern manufactured a patent rubber hose clamp. The answering defendant, Lingafelter, alleges that he furnished the money with which to conduct the business and that his interest in the patent was never transferred to him.

C. C. Shults, general manager and superintendent of the Alden Rubber Co. is perfecting a new patented seamless water bottle which will be manufactured by the Alden company in the near future. This company is enjoying an active trade in rubber sundries.

The plant of A. Adamson is being equipped with the most modern tools for the manufacture of rubber machinery. Mr. Adamson stated that he has purchased several thousand dollars' worth of new tools which are being put into the

plant. A 74 inch belt press has been shipped to the American Rubber Manufacturing Co. to be used in the new plant, that is being equipped by the company at Oakland, California. Another good sized shipment was made to the Kansas Rubber Co. of Olathe, Kansas. The company also shipped an 8 inch strainer to the Canadian Rubber Co. of Montreal, Limited.

The Williams Foundry and Machine Co. are making a strong bid for patronage in the rubber industry. Especially is this firm placing a large number of molds and hydraulic presses.

Mention was made in the last INDIA RUBBER WORLD of a warning sent out by the state fire marshal of Ohio against the use of rubber hose for gas connections where natural gas is used. The marshal, Mr. Henry D. Davis, writes to THE INDIA RUBBER WORLD that his office has no power to prevent the use of such hose, but he has encouraged the passage of city ordinances, providing that only wrought iron pipes shall be used for natural gas, owing to the fact that air combined with gas is an explosive material which will ignite from a spark or the blaze of a lamp or match—besides which the danger of asphyxiation is always to be kept in mind.

J. H. Adams has been appointed receiver of the firm of Dunton & Todd, of Akron, manufacturers of rubber horse shoes, upon a petition filed in the common pleas court, alleging that the firm was insolvent. The suit was brought by C. A. Holloway, who was the manager of the plant, and who represented that he held claims amounting to \$485.

E. W. Gammell, formerly connected with The India Rubber Co., of Akron, has been appointed general purchasing agent of the Hartford Rubber Works Co., entering upon his new duties May 1.

A series of receptions was tendered to the office men and other employes of The B. F. Goodrich Co., The Diamond Rubber Co., and the Firestone Tire and Rubber Co., during the past month, by the Young Men's Christian Association in Akron. The latter organization has just opened its spacious building, and the receptions were held in order to enlist the office men and employes of the big rubber companies as members. As a result of these receptions the membership of the new organization is largely made up of employes of the rubber concerns.

Joseph Dangel, superintendent of the American Hard Rubber Co.'s Akron factory, is captain of the champion bowling team of Summit County and Akron. The team is known as "The Rubbernecks" and won the city championship. The same team has bowled for four seasons and at the close of this season it was banqueted by the other teams of the county.

A rubber social, for the purpose of raising money for church needs, is the latest novelty. The Altar Society of the Mansfield (Ohio) Catholic church held such a social on May 12, at which every person present donated some article of rubber. The church parlors were turned into a good sized rubber store. Later the goods were sold at auction and the proceeds were turned over to the church treasurer.

The capital stock of the Dentists' Dental Rubber Co. of Akron which was recently incorporated with \$1000 capital, has been increased to \$100,000. For the present the company expects to have its product made by another rubber company; later on the company expect to build their own factory.

THE NEW JERSEY RUBBER INDUSTRY.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: the general condition of the rubber trade in and about Trenton continues active, all the companies having a good supply of orders on hand. While the rush of a month or two ago has dropped off to some extent, the present output in all the mechanical lines exceeds that of the corresponding period of any recent year, notwithstanding the high price of rubber and cotton. As a result manufacturers are continually on the lookout for first class rubber workers, and the improved conditions in the various factories have eliminated any feeling of dissatisfaction among the employes which may have existed a year ago.

The Standard Rubber Co. (Trenton), incorporated in September last, have opened branches in Boston and Chicago to take care of the rapid growth of their business. Mr. James D. Brady, the company's manager, who lately returned from a trip East, states the condition of the rubber business throughout the New England states as exceptionally good. The Boston office is in charge of Mr. P. A. Murphy. The company are carrying a stock at the Chicago office, and are now filling many orders direct from the western branch.

With the Saturday half holiday now in effect, many companies have organized athletic clubs and a promise of strong rivalry for team honors exists among the men. The employes of the United and Globe Rubber Manufacturing Cos. are much interested in the baseball team lately organized. Through their manager they have challenged all other rubber company teams.

CEYLON RUBBER EXHIBITION.

ON another page appears an advertisement of the rubber exhibition, under official auspices, to be held in Ceylon in September next. It is intended to represent the latest progress in dealing with rubber from every standpoint—from the forming of plantations and the collection of the product to the manipulation of the latter in the manufacture of rubber goods. The planning of the exhibition has been the subject of much careful thought, it has enlisted widespread interest, and the results promise to be of real value to the rubber interest throughout the world. The coming event has had attention already in the news columns of our Journal; it is referred to here to introduce a remark on how the advertising columns of THE INDIA RUBBER WORLD have gradually recorded so many changes in connection with rubber—not the least of which is the substitution now in progress of plantation rubber for the forest product.

Prizes are offered for samples of rubber grown in Ceylon, in 12 classes, including 11 gold medals, 12 silver medals, and 3 silver cups. The list of exhibits provides for "Pará" (*Hevea*), *Castilloa*, "Ceará" (*Manihot*), and "rambong" (*Ficus*) rubbers. Another list of prizes is offered for rubber in the same classes, whether produced in Ceylon or abroad. Also, additional prizes (1) for the best collection of rubber other than the preceding, and (2) the best commercial sample of rubber in the show. Besides, 25 gold medals are offered for rubber collecting and coagulating apparatus and processes.

NEWS OF THE AMERICAN RUBBER TRADE.

THE BOWERS RUBBER CO. REBUILDING.

MR. W. F. BOWERS, of the Bowers Rubber Co. (San Francisco), who was a recent visitor in the office of THE INDIA RUBBER WORLD, talked most interestingly of the earthquake experiences as they relate to the Bowers company. It seems that although the earthquake was somewhat severe, it in no way injured the factory, and the hands, after a brief scare, were hard at work



as usual and the factory would have been running right straight along had it not been for the fire that finally drove them away from the building and destroyed it.

It was very fortunate for Mr. Bowers that he had already begun the erection of a new factory at Black Diamond, some 50 miles from San Francisco. This he at once began to rush to completion, and at the time this paper goes to press machinery will have arrived for its equipment, and it will be running by the first of August.

After the fire, Mr. Bowers hunted up his help and moved them all out to Black Diamond, erecting temporary houses



for them and setting them at work wherever they fitted in. The illustrations on this page show the calender room of the old factory after the fire and one of the temporary houses at Black Diamond.

A GOLF BALL THAT PAYS NO ROYALTY.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We wish to call your attention to a part of statement in your issue of

June 1 (page 291), which you have copied from the New York Sun. This article states: "In this country all other makers of rubber cored balls pay a royalty to the patentees' firm, and should the House of Lords sustain the American patent, which the lower courts have not done, makers of rubber cored balls the world over would have to pay a similar royalty."

We wish to state that the Par ball, manufactured by the Republic Rubber Co., is a rubber cored ball with a Gutta-percha cover, and is manufactured by this company under United States patent No. 730,303. We pay no royalty to any patentee referred to in the article printed in your paper. We have taken every possible means, and at considerable expense, to acquaint every individual golf player that we will protect him absolutely in his rights to play the Par ball; we have also advised every dealer who handles the Par ball, absolute protection.

THE REPUBLIC RUBBER CO.

Youngstown, Ohio, June 7, 1906.

By J. LOMASNEY, Vice President.

GENERAL ELECTRIC CO.'S REPORT.

THE fourteenth annual report of the General Electric Co. (Schenectady, New York), for the year ending January 31, 1906, shows: Goods billed during year, \$43,146,902; orders received, \$50,044,272; profits, \$7,319,160.61; dividends paid, \$3,861,062; surplus at end of year, \$12,027,295.09. The capital authorized is \$60,000,000 and the amount outstanding \$54,286,750. Cash figured in the assets at \$6,356,093.77; the company have no note payable; the patent account has been written off until it amounts to only \$1,000,000 (this account figured at \$4,000,000 in 1899). The report does not refer in anyway to the company's rubber department, but this is very important, in view of the amount of insulated wire sold from their factories.

RUBBER FOOTWEAR FOR THE INDIANS.

PROPOSALS were opened at St. Louis, on April 26 by the board of Indian commissioners of the United States, for certain supplies for the Indian service for the fiscal year beginning July 1, 1906, to include the articles of footwear in the following list. With the exception of that to Mr. Sherman, all the awards were made to J. Edmund Strong, who is said to represent the Edwards-Stanwood Shoe Co. (Chicago), and who has been the successful bidder for several years past. Below is a list of the articles contracted for, together with the prices at which the awards were made:

800 pairs, men's rubbers, Nos. 7-11.....	\$2 45½
2965 pairs, overshoes, arctics, boys Nos. 1-6.....	68 .86
1230 pairs, overshoes, arctics, misses, Nos. 11-2.....	.59
1590 pairs overshoes, arctics, men's Nos. 7-11.....	1.02
575 pairs overshoes, rubber boys', Nos. 1-6.....	.36
515 pairs, overshoes, rubber misses', Nos. 11-2.....	.31½
1715 pairs, overshoes, rubber, women's Nos. 3-8.....	.38
190 pairs, overshoes, rubber, men's Nos. 7-11.....	.54½

William F. Sherman, St. Louis, was awarded the contract for 1590 pairs of women's arctics, Nos. 3-8, for 72 cents. The total number contracted for is 11,170 pairs, against 8607 pairs called for last year.

AMERICAN RUBBER MANUFACTURING CO.

THE factory of this company in Spear street, San Francisco, was demolished by the earthquake in April, though not reached by the fire. Their machinery was only slightly

damaged and their stock remained practically intact. The company are erecting a larger factory, to include considerable new machinery, in Oakland, which they expect to have in operation very shortly, making the same line as previously—hose, belting, and packing, and other mechanical rubber goods. This company was incorporated early in 1905 to succeed to the business of the West Coast Rubber Co.

CANFIELD RUBBER CO.—EXTENSION.

AN important addition is being made to the manufacturing facilities of the Canfield Rubber Co. (Bridgeport, Connecticut). They have leased and are fitting up the Knapp & Cowles factory property, at Railroad avenue and Garden street, where they are installing an entirely new power plant, putting in a heavy duty engine with direct connection to mill room and rope drive for balance of the plant. This additional factory will accommodate twice the present working force, and provide room for other lines of production which may be added from time to time.

NEW ENGLAND RUBBER CLUB COMMITTEES.

THE following assignments on committees of the New England Rubber Club have been made for the current year. The secretary, treasurer, and assistant treasurer are members *ex officio* of the dinner, entertainment, and sports committees:

Dinner.—Francis H. Appleton, chairman; Eugene H. Clapp, J. Frank Dunbar, G. E. B. Putnam, Ernest B. Benson.

Entertainment.—George H. Mayo, chairman; E. E. Fay, William H. Palmer, J. S. Patterson, George O. Currier, Jr.

Auditing.—J. Frank Dunbar, George P. Eustis

Sports.—W. E. Parker, chairman; F. D. Balderston, R. L. Chipman, W. E. Farrington, Frederick T. Ryder.

Resolutions.—Arthur W. Stedman, chairman; George P. Whitmore, E. E. Wadbrook.

RUBBER MACHINERY FOR EUROPE.

THE Birmingham Iron Foundry (Derby, Connecticut), are understood to have received orders recently for calendars and washers for the rubber factory of Michelin et Cie., of Clermont-Ferrand, and for a new rubber concern in Paris, the Société Parisienne du Caoutchouc Industriel. American machinery of this type, by the way, is dutiable at a rate 50 per cent. higher than is paid on imports from England or Germany. Mr. F. D. Wanning, secretary and treasurer of the Birmingham foundry, lately returned from a visit to Europe.

NEW INCORPORATIONS.

THE Kenton Rubber Co., at Kenton, Ohio, May 29, 1906, under Ohio laws; capital, \$25,000. Incorporators: John N. Kurtinden, L. A. Ansley, Charles S. Franklin, A. P. Conant, and Mabel A. Franklin.

=Dodge Rubber Stamp Co. (Oakland, Cal.), May 25, 1906, under California laws; capital authorized, \$25,000. Directors: H. L. Breed, J. S. Dodge, K. T. Dodge.

=Rubber Manufacturing and Distributing Co., a Maine corporation, has filed in Washington state its papers of incorporation, with notice of appointment of L. B. Hitchings, at Seattle, Wash., as agent in that state.

=Amazon Rubber Co., May 10, 1906, under New Jersey laws; authorized capital \$1,000,000. Incorporators: J. George Lutz, Charles H. Hanson, John J. Griffin, and Kenneth K. McLaren (connected with a corporation agency)—all of No. 15 Exchange place, Jersey City, N. J.

=Multiplex Tube Tire Co., May 8, 1906, under New Jersey

laws; authorized capital, \$1,000,000. Incorporators: Frank A. Magowan, Frank B. Adams, John P. Fritts, and Kenneth K. McLaren—all of No. 15 Exchange place, Jersey City, N. J.

=The Flexible Tire Co. (Springfield, Mass.), May 15, 1906, under Massachusetts laws; capital, \$60,000, in \$10 shares. William G. Marr, president; Richard J. Talbot, treasurer; Dr. James P. Hillard, clerk.

=Metropolitan Rubber Co., April 21, 1906, under the laws of New Jersey; capital, \$2000. Incorporators: William F. Ackerman, Harvey H. Westervelt, and Edwin A. Westervelt, all of Jersey City.

=The Paige Rubber and Asbestos Co., April 11, 1906, under Missouri laws; capital \$20,000. Incorporators: Nathaniel Paige, Jr., (president); Willard S. Paul, and Clara Paul. The company have established at No. 121 East Fourth street, Joplin, Mo., a business in supplying the important mining district of which that town is the center with mechanical rubber goods. It is the first exclusive rubber and asbestos house in that region.

=International Rubber Co., May 24, 1906, under New Jersey laws; capital, \$100,000. Incorporators: John W. Ingram, Le Grand Bouker, George H. Russell. Registered office: No. 243 Washington street, Jersey City.

=The Anti Rubber Tire Co., recently incorporated under the laws of California, are erecting a factory at Wilmington, near Los Angeles, for making leather automobile and bicycle tires.

=The Bristletite Brush and Rubber Co., February 28, 1906, under New Jersey laws; capital, \$25,000. Incorporators: George F. Travis, John H. Hoppe, and John H. Eastwood, all of Belleville, New Jersey. The company make a specialty of a rubber handled shaving brush, manufactured for them by the Hardman Rubber Co.

TRADE NEWS NOTES.

THE recent issue of \$500,000 additional capital stock of the Canadian Rubber Co. of Montreal, Limited, brings the total to \$2,000,000, the authorized capital of the company. It has been found necessary to increase their manufacturing facilities, and also their working capital, and the new issue has been approved by the shareholders, taking effect on June 15, at par to the existing shareholders, in the ratio of 1 to 3.

=The Pacific coast manager of the Diamond Rubber Co. (Akron, Ohio), after the destruction of the San Francisco headquarters, crossed the bay to Oakland, to look for new premises. Not finding anything suited for his purpose, he contracted with a local builder to have a frame structure, covering 5000 square feet of ground, erected within 12 days, and it was done. Meanwhile, 3 carloads of goods had arrived from the factory at Akron, and further shipments were on the way.

=Mr. William J. Gorham, the exceedingly energetic president of the Gorham Rubber Co. (San Francisco), is justly proud of the fact that after the earthquake and fire the building that he rushed up to house his employes was the very first of the quick building operations that at once began.

=The strike of the Boston Insulator and Asbestos Workers' Union for an advance of 50 cents per day, which was inaugurated on May 1, and mentioned in the last issue of this paper, has been continued indefinitely, by a vote of the strikers in secret ballot on May 21.

=Some of the so-called minor industries connected with the rubber trade are exceedingly large and but little known. For example, the manufacture of wooden shells, of which every calender and stock room has hundreds, is practically in the hands of one concern, that of Adolph Martin & Son (Passaic, New Jersey), who manufacture solid patent wooden shells, of which there are nearly a million in use in the rubber manufacturing at the present time.

=Dr. Durand Woodman (New York), well known in the rubber trade as an analytic chemist, continues to be called as an expert in legal cases. A recent instance was where the Morris Canal company, in New Jersey, proceeded against the owners of a paper mill, for the alleged pollution of the canal so as to render the water unfit for use by woolen factories supplied from the canal. Dr. Woodman testified for the canal company, and the case appears to have been decided upon his evidence.

=The Clark Insulation Co. (Boston) announce the change of name to the Boston Insulated Wire and Cable Co., the ownership and management remaining the same.

=Queen Manufacturing Co., of Marshalltown, Iowa, will remove their factory to Webster City, Iowa, the citizens of which are reported to have invested \$10,000 in the stock of the company. The products—door mats, curry combs, and various other specialties—are based upon patents issued to A. S. Burnell.

=That a man connected with the rubber trade in so important a way as Mr. Anton C. Eggers should achieve the distinction of having his first operatic effort produced upon a high class New York stage, brings up the question whether there is any connection between rubber and music. The operetta "Nina," which was given throughout the first week of May at Irving Place Theatre, is the work, both words and music, of Mr. Eggers, of the Goodyear's India Rubber Glove Manufacturing Co. The *New-Yorker Staats Zeitung*, in a lengthy and favorable critique, remarked that Mr. Eggers drew out his themes like rubber bands. In spite of the joke, however, the critic predicts for the composer a brilliant career in the world of music.

=The United States Rubber Co. are filling orders for their Pacific Coast trade from their store at Portland, Oregon. They are negotiating for a new building in San Francisco, and shall continue doing business there as formerly, as they feel that San Francisco will be as large if not a larger distributing point than ever. Their temporary office in that city is at No. 2600 Pacific avenue.

=One of the newest applications of the conveyor belt principle to merchandizing is a rubber belt 450 feet long, in the United States Express Co.'s building in Hoboken, New Jersey. The belt, which is 36 inches wide, will convey packages from the wagons to the storage and distributing department.

=Joseph Dixon Crucible Co. (Jersey City, New Jersey) refer to a series of tests on roller bearing made by Professor C. H. Benjamin, at the Case School of Acquired Science (Cleveland, Ohio), compared with certain results which have been obtained by Professor Goss, of Purdue University, from plain bearings lubricated with kerosene and Dixon's Flake Graphite. Without going into detail in this place it may be pointed out that the results tend to show that a graphitic mixture well designed for the service expected of it made a very much better showing than from the roller bearing.

=The Siemon Hard Rubber Corporation (Bridgeport, Connecticut) have just completed an addition to their factory which duplicates their floor space. They manufacture insulating compounds entirely, and the increased space will be used for the extension of their press room capacity. As their work is along the lines of specialties for large manufacturers of electrical goods in the United States and Canada, they do not issue any catalogue.

=Mr. A. F. Townsend, president of the Manhattan Rubber Manufacturing Co., has just returned from Peekskill, New York, where he has been in camp with the National Guard of New York state. He is lieutenant of Troop A, seventy-first regiment.

=Electric Hose and Rubber Co. (Wilmington) have filed with the secretary of state of Delaware a certificate of increase of capital from \$300,000 to \$500,000.

=The friends of Mr. Humphrey O'Sullivan, of the O'Sullivan Rubber Co. (Lowell, Massachusetts), are talking of him for political promotion. His name has been mentioned in connection with the positions of congressman and lieutenant governor.

=The Michelin Products Selling Co., Inc. (Nos. 31-33 West 31st street, New York), of which E. D. Winans is general manager, have acquired the sole and exclusive rights in the United States to import Michelin tires and other products of Michelin et Cie., of Clermont-Ferrand, France.

=U. S. Rubber Reclaiming Works (New York) have arranged for representation for the future sale of their products to the European trade by Meyer & Bussweiler, Limited, 29, Mincing lane, E. C., London, and Union Bank chambers, Liverpool. The latter firm will keep stocks in Liverpool of all the brands of the reclaiming company such as "Victoria" (which has hitherto also been sold under the name of Excelsior), "Matchless," etc.

=The Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, are the only company on this continent making revolving rubber heels, though this type of heel is so widely used in Great Britain. They are also extensive manufacturers of other rubber heels.

=Mr. Charles N. Candee, secretary of the Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, has recently been on a visit to London, where his company have successfully established a selling branch at 1, Finsbury square, E. C.

=The Webster Manufacturing Co. (New York), about 18 months ago installed a very large conveyor belt in the works of the American Coke and Gas Construction Co., at Camden, New Jersey, to carry the coke from the retort to the disposal piles. Although the belt is of rubber and the coke comes from the retort almost red hot, the belt has proved such a success that a second one has just been put in.

=Mr. John D. Vermeule, president of the Goodyear's India Rubber Glove Manufacturing Co., with which he has been connected for more than 62 years, is still hale and hearty, is enjoying his yearly vacation at his summer home at York Cliffs, Maine.

=Messrs. Thomas Rowley & Co. have given up the offices they have had for so many years at 40, Corporation street, Manchester, and their sole address will be at the works, 13, Green Lane, Brook street, Manchester, which is only a short walk from the center of the city.

=At the annual meeting of the Easthampton Rubber Thread Co. (Easthampton, Massachusetts), on June 19. L. S. Stowe was reelected president, Frederick T. Ryder treasurer, and F. W. Pitcher general manager.

=The International Rubber Co., of Derby, was incorporated June 18, 1906, under the laws of Connecticut; capital, \$5000. Incorporators: Charles E. Wood, Piermont, N. Y., Albert A. Manchester, Jr., and Frederick G. Gove, New York city.

=Milford Rubber Cement Co. was incorporated June 14, 1906, under the Massachusetts laws; capital, \$25,000, of which \$10,000 preferred. G. D. Morse, Milford, New Hampshire, president; Philip H. Farley, No. 50 State street, Boston, treasurer; J. Ellison Morse, Boston, clerk.

=The various brands of Borneo rubber and Pontianak (gutta-jelutong), hitherto sold by the late Pierre T. Betts (New York), will be handled hereafter by Joseph Cantor, Nos. 56-58 Pine street.

=Referring to the projected new rubber factory at North Brookfield, Massachusetts, mentioned in the last INDIA RUBBER WORLD, a local newspaper of June 14 reported: "Everybody connected with the proposed new rubber manufacturing business for North Brookfield village is encouraged by the prospect. It is understood that nearly one-half of the proposed amount of stock has been raised." Another paper says that certain Boston people are ready to take any of the stock not subscribed in North Brookfield.

=Maynard Rubber Corporation (Springfield, Massachusetts), retailers of rubber goods, held a meeting of directors and stockholders at Hartford, Connecticut, on June 18, at which a dividend of 8 per cent. for the year was declared.

=The William Bolles Co. (Toledo, Ohio), June 11, 1906, under Ohio laws, to handle hard rubber goods; capital, \$50,000. Incorporators: William Bolles, Joseph C. Bonner, Dorothy B. Bolles, C. C. Boutelle, Florence M. Bower. This is a reorganization of The Standard Self Filling Pen Co., manufacturers for three years past of a patented fountain pen. The corporation has been formed for the purpose of enlarging the business. They are now making hard rubber holders, both for themselves and for the trade.

=The business in Gutta-percha tissue carried on, in connection with crude gutta, by the late Pierre T. Betts (New York), has been taken over by the Bishop Gutta-Percha Co., who manufactured the tissue sold by Mr. Betts. The Bishop company have always made Gutta-percha tissue, but have not until now marketed tailors' tissue in their own name.

=The incorporation of The A. Dewes Co. (New York) to manufacture the steel flanges used in keeping in position the endless solid tires used on commercial auto vehicles is another evidence of the needs of this many sided industry. The use of the side flange has grown enormously of late, its many advantages having at last been recognized by users of the solid tire in heavy work. Mr. A. Dewes, the inventor of the Dewes solid endless tire, and the president of the new company, has lately invented and patented some clever machinery especially adapted to the making of these steel flanges.

=Charles M. Evans returned lately from an initial business trip west and south in the interest of the Globe Mills Rubber Co. (Lawrence, Massachusetts), and is reported to have booked some exceedingly good orders for that company's rubber footwear.

=L. C. Chase & Co. (Boston) have removed from No. 129 Washington street to new offices at No. 89 Franklin street, where they carry stocks of the products of their four mills, one of which is the Reading Rubber Manufacturing Co. The "housewarming" in their new premises took the form of a luncheon to which a number of the firm's customers were invited.

=The American Can Co. (New York), the largest manufacturers in America of tin cans for all purposes—including rubber gathering cups, for use in rubber tapping—having outgrown their former spacious quarters, have removed to a new eight story steel frame fireproof and manufacturing building at No. 447 West Fourteenth street.

=Mr. D. McCullum, who for so many years successfully marketed the substitutes manufactured by the Corn Products Co., has gone out of that line of business and into that of marketing real rubber, having connected himself as selling agent with the Eastern Reclaimed Rubber Co. (New York).

=The Apsley Rubber Co. (Hudson, Massachusetts) are erecting at their factory a 50,000 gallon water tank as an additional measure of fire protection.

=Waterbury & Rising, of St. John, New Brunswick, have leased a four story brick building in that city for 10 years, and are having it remodeled to render it one of the best equipped warerooms in the lower provinces of the Dominion. The firm are maritime distributors for the Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, and the importance of their trade is indicated by their employment of five travelers in the maritime provinces.

=Goldberg & Rathman, dealers in rubber scrap at Boston, have found it necessary to enlarge their office space, and part of the second floor of the building they occupy, Nos. 289-293 Commercial street, is being altered for that purpose.

=Mr. George W. Knowlton, of the Boston rubber trade, recently delivered an address before the members of the New England Street Railway Club at the American House, Boston, on "The Fascinating Story of Rubber", illustrated by stereopticon views. Many samples of rubber were shown, and an account of their source was given, and a reference made to the use of rubber in street railway insulation work.

=Mr. Edward E. Menges, formerly general manager of the Seamless Rubber Co. (New Haven), has purchased the box manufacturing business of C. H. Watrous, at Middletown, Connecticut, which he purposes conducting in future upon a larger scale.

=The Rev. Everett D. Burr, D.D., of Newton, Massachusetts, has been delivering before men only a lecture on the methods which he understands to have been practised in rubber gathering in the Congo Free State. At latest accounts he had delivered 200 addresses, in 59 cities and towns.

The New England Rubber Club plan their midsummer outing for this year along somewhat different lines from those of previous years. Instead of going inland they expect to take a steamer trip to one of the beautiful islands in the harbor perhaps to Fort Warren, where baseball and other sports will be enjoyed. At the conclusion of the sports they will reembark on the steamer and a brief run takes them to Point Shirley, where at the club house they are to be served with a shore dinner. After the dinner one can return to Boston by boat or by train. The date set for the outing is July 18.

=Work was begun at the factory of the recently organized Elkhart Rubber Works (Elkhart, Indiana) on June 11, the initial output being pump valves. The plant is in charge of George W. Graham, lately employed at one of the Canadian factories.

=Additional sales branches and distributing agencies of The Canadian Rubber Co. of Montreal, Limited, have now been opened at Regina, Saskatchewan; Calgary, Alberta; and Victoria, British Columbia. The growth of the company's business in the West has necessitated these extensions, and a big increase of business is looked for as a result. This was the work of Mr. R. J. Younge, general sales manager, who during his absence visited the United States Pacific coast, returning home via Chicago.

=The river frontage of office and factory buildings of The Canadian Rubber Co. of Montreal, Limited, are being utilized for advertising purposes very effectively. Exceedingly attractive signs have been put up that will be seen by the whole of the river traffic, coming into and leaving the port of Montreal.

=The "Canadian" hanger of The Canadian Rubber Co. of Montreal, Limited, is perhaps the most attractive piece of advertising work of its kind seen in Canada. It was designed by the company's advertising manager, Mr. J. Morris Carroll, and is 40x19 inches. The design shows a winter scene on Mount Royal, and calls attention to the company's footwear. It is much appreciated by jobbers.

=Mr. A. J. MacLaren, B. Sc., general superintendent of the rubber goods department of The Canadian Rubber Co. of Montreal, Limited, is a graduate of McGill University (Montreal), class of 1896.

=Mr. George M. Allerton, treasurer of the Seamless Rubber Co. (New Haven, Connecticut), was a passenger on the steamer *Chicara*, from Toronto to Niagara Falls, on June 8, when that boat had an experience in a storm, when about two miles from the mouth of the Niagara river, which none of those on board would care to repeat. After the storm, and when the boat had been safely docked, a deputation of the passengers, headed by Mr. Allerton, called upon the captain, C. J. Smith, to express their praise of the manner in which he had handled the boat under such trying conditions, and surprised him with the present of a purse containing a handsome sum of money.

=The management of The Canadian Rubber Co. of Montreal, Limited, will tender a complimentary picnic to all their employes on Saturday, July 14. Two steamers have been chartered, and the festivities will be held at the quaint old town of Berthier, P. Q. Over 2000 of the company's work people and officials will take part in the picnic. Mr. D. Lorne McGibbon, vice president and managing director, is the moving spirit in the picnic, and intends that all taking part shall have a very enjoyable time.

=The common stock of the Rubber Goods Manufacturing Co., in which there had been practically no trading since the merger with the United States Rubber Co., has been stricken from the unlisted department of the New York Stock Exchange.

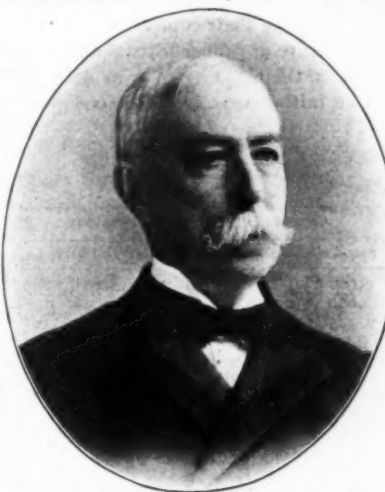
=There has been listed on the New York Stock Exchange an additional \$300,000 of first preferred stock of the United States Rubber Co., issued on account of the extension of the plant of the Morgan & Wright Co., making the total amount of first preferred stock authorized to be listed \$37,876,900.

=Mr. Elliott Durrand, president of the Cascasjal Plantation Co., of Mexico, advises THE INDIA RUBBER WORLD that the result of the first experimental tapping from 100 trees was 10 pounds of dry rubber. This tapping, however, was done at the end of the dry season, and very lightly at that.

=The Hadley Cement Co. of Canada, Limited, has been incorporated under the laws of the Dominion. The company is separate from The Hadley Cement Co. (Lynn, Massachusetts), though the factory is operated by parties interested in the latter. The factory is located at Cote St. Paul, about 3 miles from Montreal, and is designed to supply Canadian users of the Hadley cements more promptly, and without the payment of import duties as formerly.

DINNER TO EX-GOVERNOR BOURN.

A COMPLIMENTARY dinner in honor of the Hon. Augustus O. Bourn, former governor of Rhode Island and president of the Bourn Rubber Co., was given one evening recently at the Hotel Belvedere, at Bristol, R. I., by friends whom he has entertained annually for a number of years on the anniversaries of his birth. The affair was so planned as to make it a complete surprise to Mr. Bourn, from whose knowledge it was kept until the time came for sitting down to the banquet table. There were 16 in the party, and the event was thoroughly enjoyed by all present. At the postprandial ex-



ercises Colonel Samuel P. Colt, president of the United States Rubber Co., acted as toastmaster, and all the guests made brief addresses. There was music by an orchestra from Providence. The party included A. O. Bourn, Jr., Colonel Stephen W. Bourn, Judge O. L. Bosworth, Senator H. H. Shepard, John P. Reynolds, Dr. C. J. Hasbrouck, former Lieutenant Governor William T. C. Wardwell, Joseph E. Fletcher, B. Thomas Potter, Charles B. Rockwell, Walter H. Barney, E. C. Pierce, H. H. Bedell and Charles F. Chace. Letters of regret at absence were from Governor Utter and David S. Barry.

Governor Bourn became interested in the rubber industry in 1855, immediately after his graduation from Brown University, joining the company in which his father was interested, and he is still actively engaged in the business.

PNEUMATIC TIRE POOL TO DISSOLVE.

It appears probable that the selling agreement among the makers of pneumatic tires which expires on September 1 next will not be renewed, in view of the announcement that The B. F. Goodrich Co. (Akron, Ohio) will withdraw on that date from the so called "pool". The basis of the agreement is an estimated production during twelve months, amounting

to \$9,000,000, based upon the actual business of the preceding year, and the allotment of a certain share of this business to each manufacturer in the association. Any firm making more than its allotment pays into the pool fund a certain percentage on its excess. There is also involved an agreement to make prices uniform. It is understood that the allotment to The B. F. Goodrich Co. is 23 per cent. of the whole, and the withdrawal of so important a factor is expected to bring the pool to an end. A desire on the part of the tire manufacturers for freer competition in the matter of prices is believed to have had an influence in this new move, but rumors exist of dissatisfaction with the limit of production by the several makers, which probably has had more weight. The trade seems to expect somewhat lower prices immediately after the termination of the agreement, though the feeling is that present rates are not too high for good quality tires.

A REPORT FROM LA CROSSE.

A WESTERN correspondent of THE INDIA RUBBER WORLD states that it is rumored that the La Crosse Rubber Mills Co. now situated at La Crosse, Wisconsin, are planning to move to another city, to increase their capital to \$1,500,000, and to go into the manufacture of rubber footwear on a large scale. Their plans embrace the building of a modern mill, wholly for shoes, with an initial capacity of 20,000 pairs a day.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED STATES RUBBER CO.:

DATES.	Common.			Preferred.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending May 19	9,900	51	49 3/4	1,000	110 1/4	109
Week ending May 26	2,800	51	50	1,300	109 3/4	109
Week ending June 2	1,225	51	50 3/4	50	109	109
Week ending June 9	1,800	51 1/2	51	660	109 1/2	109 1/4
Week ending June 16	3,800	51 1/4	49 1/4	600	109 1/2	108 1/2
Week ending June 23	2,820	49 3/4	48 3/4	100	108 3/4	108

SECOND PREFERRED.

Week ending—	May 19.	May 26.	June 2.	June 9.	June 16.	June 23
Sales.....	900	507	100	300	500	100
High.....	80 1/2	80 1/2	81 1/4	80 3/4	80	78 1/4
Low.....	80	80	81 1/4	87	78	78 1/4

PERSONAL MENTION.

MR. FREDERICK W. WHITRIDGE, of New York, the special ambassador from the United States to the marriage of King Alphonso of Spain and Princess Ena, will be remembered in the rubber trade as one of the *concessionaires*—the other being Sir Martin Conway—from Bolivia of the territory comprised in the Acre district which led to the trouble between Bolivia and Brazil. The syndicate organized to exploit the concessions disposed of their rights to the Brazilian government for a handsome sum.

THE INDIA RUBBER WORLD is in receipt of some interesting views on the future of agriculture in the West Indies, as meriting the interest of capital in the United States and Canada, on the ground that the people of England seem to feel little interest in that part of their empire. The writer is Mr. William J. Thompson, B. Sc. A., a graduate from Toronto University in agricultural chemistry, who has been traveling for several years in the West Indies and neighboring countries for Swift & Co., Union Stock Yards, Chicago, and is now at Georgetown, British Guiana.

THE TEXTILE GOODS MARKET.

THE cotton duck situation doesn't bring any material change, as the demand continues strong and prices extremely firm. This has been the case for months in the mechanical goods trade and the demand has, if anything, been strengthened by recent operations of the rubber shoe manufacturers who are not, however, buying as liberally as they would have done had the winter been more severe.

The United States Cotton Duck Co., having purchased practically all of the stock of the J. Spencer Turner Co., have decided to sell their product directly after January 1. This is a radical change in selling methods as the output of mills now controlled by the Corporation was formerly distributed through commission houses.

This change in the selling methods will hardly exert any influence over this season's business, as it has been the custom of the trade for the past twenty years to place their orders with the commission houses in the late summer and early fall to meet early requirements, and this practice will undoubtedly continue as orders of large volume are now being booked by such concerns for next year's consumption. The mechanical rubber goods trade has been greatly inconvenienced by the paucity of stock as despite every effort made by the duck manufacturers has been altogether inadequate to the demand which has not been as heavy in years as at the present time. It is not improbable that this experience will result in the placing of the full complement of orders much earlier this season than in previous years.

One condition materially contributing to short supply and advanced prices is the reduction of hours of labor in the cotton mills of South Carolina, in order to induce help to come from other states, which condition has resulted in an advanced price in the states so effected to prevent labor from being attracted to other sections.

The abrogated export demand has resulted in demoralizing the prices of sheetings. There has, however, been no appointment in the call either domestic or export for ducks twisted or flat. In former years the flat product commanded one or two cents less than the twisted, but at the present writing it is bringing a cent or two more per pound.

The new factory to be known as the Elm City Cotton Mills, which is being erected in La Grange, Georgia, for J. H. Lane & Co. (New York), will be a considerable factor in the cotton duck situation and will materially add to the available supply. The new factory will operate 10,400 spindles and heavy looms for the manufacture of heavy duck; this equipment equalling the requirement for a 30,000 spindle mill making yarns or sheetings.

WHICH HORSE WILL YOU PUT YOUR MONEY ON?—The gambling in rubber company shares in London, says the New York INDIA RUBBER WORLD, bears about as much relation to legitimate rubber planting as betting on horse races does to the world's practical use of the horse. To which London might reply that at any rate the horses are alive and above ground, which is more than can be said of some Mexican "deals."—*Times of Ceylon.*

CHEWING gum is dutiable at 40 per cent. *ad valorem* under the new tariff of Newfoundland.

REVIEW OF THE CRUDE RUBBER MARKET.

THE price situation is practically unchanged as compared with our report one month ago. The market has been quiet meanwhile, absolutely no business being reported in New York on some days. The absence of buying is to be attributed in part to the practice of many factories to take stock at midsummer, and to reduce stores of raw material in preparation therefor. The failure of prices to decline more, particularly since the Pará crop shows a considerable increase over the preceding year, must be taken as an indication that continued activity in the rubber manufacture is predicted by sellers.

European markets have continued quiet but firm. The Antwerp auctions have resulted in somewhat lower prices. Pará arrivals (including Caucho) for the season, up to June 26, amounted to 34,500 tons, against 33,060 tons for the whole crop year (July 1-June 30) 1904-05; 30,580 tons in 1903-04; and 29,850 in 1902-03. The new crop, therefore, is the largest ever reported.

Later.—While these lines are going through press the quotations have undergone a change, leaving the prices as stated materially lower than a month ago. This is the result, in part, of lower prices at Antwerp, on June 26, than were anticipated, by about 40 centimes per kilogram. The decline at New York applies to nearly every grade, though some have advanced slightly.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on June 27—this date:

PARÁ.	July 1, '05.	June 1, '06	June 27.
Islands, fine, new.....	128@129	121@121	118@119
Islands, fine, old.....	none here	none here	none here
Upriver, fine, new.....	130@131	124@125	123@124
Upriver, fine, old.....	132@133	125@126	124@125
Islands, coarse, new.....	72@73	64½@65	64½@65
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	95@96	90@91	90@91
Upriver, coarse, old.....	none here	none here	none here
Caucho (Peruvian) sheet....	72@73	72@72½	72@73
Caucho (Peruvian) ball.....	80@81	84@85	85@86
Ceylon (Plantation) fine sheet.....			148@149

AFRICAN.	CENTRALS.
Sierra Leone, 1st qual. 102 @103	Esmeralda, sausage. . . 87@88
Massai, red..... 102 @103	Guayaquil, strip..... 72@73
Benguella..... 78 @79	Nicaragua, scrap..... 84@85
Cameroon ball..... 76 @77	Panama, slab..... 62@63
Accra flake..... 21½@22	Mexican, scrap..... 85@86
Lopori ball, prime... 114 @115	Mexican, slab..... 60@61
Lopori strip, prime... 103 @104	Mangabeira, sheet..... 60@60
Madagascar, pinky.. 94 @95	Guayule..... 35@40
Ikelemba..... 115 @116	
Soudan nigger.s.... 96 @97	

EAST INDIAN.	Per Kilo.
Assam..... 93@94	
Borneo..... 44@49½	
Upriver, fine..... 68½@70	
Upriver, coarse..... 48½@50	

Exchange, 16¼d.

Last Manáos advices:

Upriver, fine..... 6½@70	Upriver, coarse..... 37@40
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Exchange, 16½d.

NEW YORK RUBBER PRICES FOR APRIL (NEW RUBBER).

	1906.	1905.	1904.
Upriver, fine.	1.25 @ 1.28	1.31 @ 1.34	1.07 @ 1.12
Upriver, coarse....	.92 @ .95	.96 @ .99	.84 @ .88
Islands, fine.....	1.22 @ 1.25	1.27 @ 1.30	1.05 @ 1.09
Islands, coarse....	.70 @ .74	.73 @ .77	.64 @ .69
Cametá.....	.72 @ .76	.76 @ .80	.64 @ .69

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total. 1906.	Total. 1905.	Total. 1904.
Stocks, April 30	360	26 =	386	611	303
Arrivals, May.....	716	478 =	1194	463	719
Aggregating.....	1076	504 =	1580	1074	1022
Deliveries, May.....	826	467 =	1293	496	695
Stocks, May 31.....	250	37 =	287	578	327

PARÁ.

ENGLAND.

	1906.	1905.	1904.	1906.	1905.	1904.
Stocks, April 30.....	267	496	110	1280	355	495
Arrivals, May.....	1420	1660	1085	555	815	470
Aggregating.....	1687	2156	1195	1835	1170	965
Deliveries, May.....	1597	1791	1000	775	800	525
Stocks, May 31.....	90	365	195	1060	370	440

	1906.	1905.	1904.
World's visible supply, May 31.....	2078	2143	1537
Pará receipts, July 1 to May 31.....	27,584	26,326	24,890
Pará Receipts of Caucho, same dates.....	5245	5004	4204
Afloat from Pará to United States, May 31..	190	125	95
Afloat from Pará to Europe, May 31.....	451	705	480

Ceylon (Plantation) Rubber Exports, 1906.

DETAILS—BY WEEKS.

	POUNDS.	POUNDS.
January 1 to Apr. 23....	79,574	Total, 1906.....105,005
Week ending Apr. 30....	6,697	Same dates, 1905..... 39,770
Week ending May 7....	3,426	Same dates, 1904..... 28,693
Week ending May 14....	5,416	Same dates, 1903..... 17,347
Week ending May 21....	9,892	

London.

EDWARD TILL & Co. report stocks [June 1]:

	1906.	1905.	1904.
Pará sorts.....	—	—	—
Plantation, Ceylon and Straits....	38	—	—
Borneo.....	56	27	22
Assam and Rangoon.....	6	8	5
Penang.....	222	224	—
Other sorts.....	316	201	227
Total.....	638	460	254

	1906.	1905.	1904.
Pará sorts.....	1056	370	446
Caucho.....	277	296	305
Other sorts.....	512	518	662

Total, United Kingdom....	2483	1644	1667
Total, May.....	2630	1515	1644
Total, April.....	2108	1232	1367
Total, March.....	1906	1264	1136
Total, February.....	1539	1298	1341

PRICES PAID DURING MAY.

	1906.	1905.	1904.
Pará, fine, hard....	5/3 @5/4	5/6¼@5/9	4/9 @4/10½
Do soft.....	5/2 @5/3¼	5/6¼@5/8½	4/8 @4/9¾
Negroheads, scrappy 3/10	@3/10½	4/0½@4/1	3/9
Do Cametá 3/0¼	@3/1½	3/3½@3/4	2/11 @3/
Bolivian.....	5/3¼ @5/4	5/7 @5/8¼	4/10 @4/11
Caucho, ball.....	3/7 @3/7¾	3/4 @3/6	3/3 ¾@3/5
Do slab....	2/11¼ @3/0¼	3/1 @3/2	2/10¼@2/11
Do tails....	@3/4¼	3/1½ @3/3	3/2 @3/2½

THE LONDON AUCTIONS.

JUNE 8.—During the past week the market has been easier, and practically no business has been done, but closes slightly firmer. Sales reported were hard fine at 5s. 3d. on the spot and 5s. 3½d.

for July-August delivery. Soft fine 5s. 2d. nearest value. At today's auctions medium grades in slow demand at earlier prices. Para coarse 4s. 7½d.; Peruvian ball 3s. 6¼d.; Mollendo fine, rather weak 5s.; Colombian white sheet 3s. 4¾d.; Ecuador scrap 3s. 8d.; Madagascar pinky mixed 3s. 9d.

PLANTATION RUBBER.

JUNE 8—About 3 tons Ceylon and about 5 tons Straits and Malay States offered at auction to-day and most of it sold. Ceylon fine pale biscuits 6s. 0¼d. [= \$1.46½]; scrap up to 5d.; Ceará 6s. 0¼d. Straits at corresponding prices, including 25 cases from Bukit Rajah Rubber Co., large sheet mixed colors 6s. 0¼d. @ 6s. 0¼d.; red Rambong (*Ficus elastica*) 4s. 10½d. [= \$1.78½].

Liverpool.

EDMUND SCHLÜTER & Co., report [May 31]:

With a quiet demand and absence of speculation transactions in fine during the month show only a slight alteration in the value as against April. The visible supply shows a substantial reduction. With moderate receipts during June, the market will remain steady, or it may show a slight recovery.

WORLD'S VISIBLE SUPPLY OF PARÁ, MAY 31.

	1906.	1905	1904.	1903.	1902.
Tons.....	3710	2908	2036	3656	4362
Prices, hard fine 5/3¼	5/8½	4/10	3/10¼	3/	

LIVERPOOL STOCKS OF AFRICAN RUBBER, MAY 31.

1906	367	1903	330	1900	834
1905	390	1902	592	1899	605
1904	567	1901	852	1898	423

WILLIAM WRIGHT & Co. report [June 1]:

Fine Pará.—There has been a little more activity but on the whole the market has been dull throughout the month, and prices are ¼d. per pound easier. The demand in America has been dull. Although Pará receipts are larger than anticipated, the increase is entirely in Peruvian ball and slab; in fact the receipts of Fine, etc., are 260 tons less than corresponding month last year, making the total increase in the Pará crop only 680 tons. This will have its effect later on, and accounts for the caution exercised by sellers, especially as regards forward delivery, and also for the fact that in spite of the full demand there has been a small reduction in values.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We are pleased to say we have recovered the stolen rubber mentioned in your last issue (page 308), with the exception of ¼ ton, which the thieves had succeeded in disposing of in small lots. We beg to thank you for your help in this matter through the medium of your paper, and remain, Yours truly,

HYDES, LATHAM & Co.

Liverpool, June 12, 1906.

Para.

R. O. AHLERS & Co. report [May 21]:

The decline has made further progress in accordance with the home market, but actually affected very little our market, as the Sertão crop is finished and Islands entries continue moderate. It seems to be probable that entries from July to September will be heavier than usual, due to the early start of the work in the interior.

Bordeaux.

THERE has been organized here a *Syndicat du commerce des caoutchoucs*, the statutes having been approved at a meeting of the members on March 27. *Revue Commerciale* regards Bordeaux as the French national market for rubber, the prominence of which will be enhanced by the new organization. Havre, however, it says, seeks to become the national market, in which encouragement is given by the *cessionnaires* of the Congo, who are mostly Belgians. While the French government compels the latter to have a port of transit in France, they desire to have it as near as possible to Belgium. The editor of the *Revue* would allow Havre to keep the

monopoly of the imports into France of Pará rubber, but if the Congo produce should be added to Bordeaux's present trade, the latter would become the most important rubber market in the world. The government is asked to take off certain trade restrictions, and the French colonial banks to come to a better understanding of how they can assist in the development of the home rubber market. The members of the new rubber syndicate are:

Importers: Arcin Georges et Cie., Buhan et Teisseire, Delmas et Cie., Devès, Chaumet et Cie., Maurel et Prom.

Merchants: R. Henry; Mercet Sauliere, Touton et Crous, Weill frères, Yorke et Furon.

Brokers: E. Chaumel, F. Faucher.

Hamburg.

AN import and commission business in India-rubber, Gutta-percha, and Balata has been established here under the style Ullmann Gebrüder & Co., with a branch in Paris, Ullmann Frères et Cie. The partners are Jacques Ullmann, J. Ullmann, H. Hammer, and E. Eggers (limited partner).

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the sale of May 30 the transaction comprised the following quantities:

	Exposed.	Sold.
Congo sorts.....	299	292
Other sorts.....	29	13
Total.....	328	305

Prices were very irregular, the average comes out at 20 @ 25 centimes—i. e., about 2 per cent. below valuation. The demand was moderate, as customary at this time of the year. The next large sale will take place on June 26, when 415 tons will be exposed. The usual Congo sorts, viz., Uelé, Aruwimi, Upper Congo ball, Kasai, and Congo-Djuma are represented with big lots. A small sale was held on June 15. Of 35 tons 25 were disposed of at somewhat irregular and partly lower prices.

C. SCHMID & CO., SUCCESEURS.

Antwerp, Belgium, June 1, 1906.

[THE offerings on June 26 included 1239 kilos Bolivian, 5753 maniçoba (Ceará), and 4151 mangabeira. Also, 5200 kilos Guayule rubber, estimated at 7.25 francs [= 63½ cents per pound]. Also, 13 kilos African plantation rubber, estimated at 14 francs.]

RUBBER ARRIVALS AT ANTWERP.

APRIL 17.—By the *Philippeville*, from the Congo:

Bunge & Co. (Société Générale Africaine) kilos	85,000
Do	59,000
Do	18,000
Do	1,500
Do	34,000
Do	101,000
Do	19,000
Do	700
Do	2,000
M. S. Cols	3,800
Société Coloniale Anversoise (Cie de Lomami)	11,000
Do	6,700
Do	2,700
Do	3,700
Comptoir Commercial Congolais.....	2,000
Charles Dethier..... (Société La "M'Poko")	10,500 360,600

MAY 30.—By the *Philippeville*, from the Congo:

Bunge & Co. (Société Générale Africaine) kilos	137,000
Do	14,000
Do	23,000
Do	2,000
Comptoir Commercial Congolais.....	18,000
L. & W. Van de Velde..... (Cie. du Kasai)	55,000
Ch. Dethier	1,000
M. S. Cols	500
Do	1,000
Société Coloniale Anversoise (Belge du Haut Congo)	8,000
Do	500
Do	5,000
Do	2,000
Cie. Commerciale des Colonies (La Haute Sangha)	10,000
Société Equatoriale Congolaise (Société l'Ikelemba)	2,000 279,000

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

June 4.—By the steamer *Bernard*, from Manáos and Pará:

IMPORTERS	Fine.	Medium.	Coarse.	Caucho.	Total.
A. T. Morse & Co....	76,900	19,700	37,200	16,400=	150,200
N. Y. Commercial Co.	35,400	11,700	56,000	18,500=	121,600
Poel & Arnold.....	7,100	47,100	3,800	.....=	58,000
General Rubber Co....	3,200	15,100	8,000	4,600=	30,900
Edmund Reeks & Co..	5,800	2,100	15,400	7,900=	31,200
Hagemeyer & Brunn..	10,100	700	11,300	.....=	22,100
Neale & Co.....	3,200	300	15,100	300=	18,900
G. Amsinck & Co....	4,300	4,300	1,500	200=	10,300

Total..... 146,000 101,000 148,300 47,900= 443,200

June 14.—By the steamer *Maranhense*, from Pará:

N. Y. Commercial Co..	9,700	300	34,200	....=	44,200
C. P. dos Santos.....	16,800	6,100	10,400	3,700=	37,000
A. T. Morse & Co....	17,300	700	9,200	9,800=	37,000
Hagemeyer & Brunn..	21,700	2,000	9,400	.....=	33,100
Poel & Arnold.....	.....	.....	33,200	.....=	33,200
Edmund Reeks & Co.	11,600	2,000	5,900	4,800=	24,300
G. Amsinck & Co....	22,700	100	1,200	.....=	24,000
Neale & Co.....	.....	.....	8,200	.....=	8,200
General Rubber Co..	1,000	.....	1,200	.....=	2,200

Total..... 100,800 11,200 112,900 18,300= 243,000

PARA RUBBER VIA EUROPE.

MAY 31.—By the <i>Carmania</i> =Liverpool:	
New York Commercial Co (Fine).....	19,000
Poel & Arnold (Caucho).....	3,500 22,500
JUNE 11.—By the <i>Umbria</i> =Liverpool:	
New York Commercial Co. (Fine).....	29,000
JUNE 13.—By the <i>Oceanic</i> =Liverpool:	
Arana Bergman Co (Caucho).....	28,600
JUNE 16.—By the <i>La Savoie</i> =Havre:	
Poel & Arnold (Caucho).....	29,000
JUNE 18.—By the <i>Campania</i> =Liverpool:	
New York Commercial Co. (Fine).....	17,000
A. T. Morse & Co (Coarse).....	11,500 28,500
JUNE 21.—By the <i>Teutonic</i> =Liverpool:	
Poel & Arnold (Coarse).....	3,500
JUNE 22.—By the <i>Wallersee</i> =Hamburg:	
George A. Alden & Co (Fine).....	42,000
Poel & Arnold (Fine).....	11,500 53,500

OTHER ARRIVALS AT NEW YORK

CENTRALS.

MAY 25.—By the <i>Advance</i> =Colon:	
Hirzel Feltman & Co.....	3,500
Dumarest Bros. & Co.....	2,500
A. Santos & Co.....	2,500
Roldan & Van Sickle.....	2,300
G. Amsinck & Co.....	1,800
Lawman & Kemp.....	1,700
Mann & Emdon.....	1,500
A. Rosenthal Sons.....	1,500
A. Sanders & Co.....	1,200
Laurence Johnson & Co.....	1,000
Wessels, Kulekamp Co.....	900
R. G. Barthold.....	500
W. R. Grace & Co.....	500 22,500
MAY 26.—By the <i>Esperanza</i> =Frontera:	
Harburger & Stack.....	6,500
E. Steiger & Co.....	1,000
Graham, Hinkley & Co.....	500 8,000
MAY 26.—By the <i>Panama</i> =Colon:	
Hirzel Feltman & Co.....	5,000
G. Amsinck & Co.....	4,400
Piza, Nephews & Co.....	1,600
Mann & Emdon.....	600 11,000
MAY 28.—By the <i>Niagara</i> =Tampico:	
Edward Maurer.....	22,500
MAY 29.—By the <i>Comus</i> =New Orleans:	
A. T. Morse & Co.....	8,500
G. Amsinck & Co.....	3,500
Manhattan Rubber Mfg. Co.....	1,500
Eggers & Heinlein.....	1,000 14,500
MAY 31.—By the <i>Tagus</i> =Carrihaen:	
A. M. Capens Sons.....	4,600
George A. Alden & Co.....	3,300
David Midgeley Sons.....	2,500
G. Amsinck & Co.....	2,000
American Trading Co.....	1,000
Mecke & Co.....	1,000
Thurin & Lartegan.....	1,000
A. Held.....	800
Isaac Brandon & Bros.....	700
Roldan & Van Sickle.....	600
Arambu Incepta.....	600 17,500
MAY 31.—By the <i>Carmania</i> =Liverpool:	
George A. Alden & Co.....	28,400
H. W. Peabody & Co.....	3,500 30,900
JUNE 2.—By the <i>Manzanillo</i> =Tampico:	
European Account.....	25,000
Continental & Mexican Co.....	7,500 32,500
JUNE 4.—By the <i>Protens</i> =New Orleans:	
G. Amsinck & Co.....	1,200
Eggers & Heinlein.....	800 2,000

CENTRALS—Continued

JUNE 4.—By the <i>Alliance</i> =Colon:	
Dumarest Bros. & Co.....	3,500
Hirzel Feltman & Co.....	2,800
Mann & Emdon.....	2,100
G. Amsinck & Co.....	1,500
Laurence Johnson & Co.....	1,400
Roldan Van Sickle.....	1,200
A. M. Capens Sons.....	1,100
Meyer Hecht.....	700
Kunhardt & Co.....	600
R. G. Barthold.....	600 15,500
JUNE 4.—By the <i>Vigilancia</i> =Frontera:	
Harburger & Stack.....	10,000
E. Steiger & Co.....	1,500
H. Marquardt & Co.....	1,500
E. N. Tibbals & Co.....	1,500 14,500
JUNE 5.—By the <i>Minnetonka</i> =London:	
General Rubber Co.....	80,000
JUNE 6.—By the <i>El Siglo</i> =Galveston:	
Continental & Mexican Co.....	35,000
JUNE 6.—By the <i>Cameous</i> =Bahia:	
Adolph Hirsch & Co.....	17,000
American Commercial Co.....	1,500 18,500
JUNE 6.—By the <i>Sarnia</i> =Colombia:	
A. Held.....	4,500
American Trading Co.....	2,500
Cortez Commercial Co.....	2,000
D. A. DeLima & Co.....	1,000
Isaac Brandon & Bros.....	1,000
Kunhardt & Co.....	700 11,700
JUNE 8.—By the <i>Finance</i> =Colon:	
G. Amsinck & Co.....	6,600
Meyer Hecht.....	4,500 11,100
JUNE 8.—By the <i>El Mar</i> =Galveston:	
Continental & Mexican Co.....	35,000
JUNE 9.—By the <i>Yucatan</i> =Tampico:	
Edward Maurer.....	29,000
New York Commercial Co.....	10,000 39,000
JUNE 9.—By the <i>El Monte</i> =New Orleans:	
A. N. Rotholz.....	3,500
Manhattan Rubber Mfg Co.....	2,000 5,500
JUNE 9.—By the <i>Monterey</i> =Mexico:	
G. Amsinck & Co.....	3,500
Graham, Hinkley & Co.....	1,500
Thebaud Brothers.....	1,000
H. Marquardt & Co.....	2,500
American Trading Co.....	500
Harburger & Stack.....	500 9,500
JUNE 11.—By the <i>St. Paul</i> =London:	
Poel & Arnold.....	55,000
JUNE 11.—By the <i>Patricia</i> =Hamburg:	
J. H. Rossback & Bros.....	9,800
JUNE 12.—By the <i>Colon</i> =Colon:	
E. B. Strout.....	2,700
Mann & Emdon.....	2,500
Meyer Hecht.....	1,800
Piza, Nephews & Co.....	1,000 8,000
JUNE 12.—By the <i>Alleghany</i> =Colombia:	
United Fruit Co.....	1,500
H. & S. Henry Co.....	1,000
Isaac Brandon & Bros.....	1,000
Mecke & Co.....	700
Sperling & Williams.....	500
C. A. del Gado.....	500 5,200
JUNE 13.—By the <i>Chalmette</i> =New Orleans:	
A. T. Morse & Co.....	8,500
G. Amsinck & Co.....	3,000 11,500
JUNE 14.—By the <i>Atrato</i> =Carrihaen:	
George A. Alden & Co.....	3,200
G. Amsinck & Co.....	2,500
J. A. Medina & Co.....	1,500
Mecke & Co.....	700
E. B. Strout.....	600 8,500

CENTRALS—Continued.

JUNE 15.—By the <i>El Dia</i> =Galveston:	
Continental Mexican Co.....	55,000
JUNE 18.—By the <i>Campania</i> =Liverpool:	
George A. Alden & Co.....	13,500
Poel & Arnold.....	3,500 17,000
JUNE 18.—By the <i>Seguranca</i> =Frontera:	
Harburger & Stack.....	10,000
E. Steiger & Co.....	3,500
H. Marquardt & Co.....	2,500
Graham, Hinkley & Co.....	1,000
E. N. Tibbals Co.....	500 17,500
JUNE 18.—By the <i>El Dorado</i> =New Orleans:	
A. T. Morse & Co.....	15,500
Thebaud Brothers.....	1,500
Eggers & Heinlein.....	1,500 18,500
JUNE 18.—By the <i>Advance</i> =Colon:	
Hirzel Feltman & Co.....	9,300
E. B. Strout.....	4,700
G. Amsinck & Co.....	3,300
Wessels, Kulekamp Co.....	2,800
Arambu Incepta.....	2,500
Edward Maurer.....	1,000
Silva Bussenius Co.....	700
Meyer & Hecht.....	500
A. S. Lascellas & Co.....	500
Bartling & De Leon.....	600 25,900
JUNE 19.—By the <i>Seneca</i> =Tampico:	
Edward Maurer.....	22,500
H. Marquardt & Co.....	1,000
American Trading Co.....	500 24,000
JUNE 19.—By the <i>Sibiria</i> =Colombia:	
Kunhardt & Co.....	2,000
Roldan & Van Sickle.....	1,200
Isaac Brandon & Bros.....	800
American Trading Co.....	500
A. D. Straus & Co.....	500 5,000
JUNE 20.—By the <i>Byron</i> =Bahia:	
A. D. Hitch & Co.....	55,000
American Commercial Co.....	3,500
Adolph Hirsch & Co.....	3,000
Laurence Johnson & Co.....	1,000 62,500

AFRICANS.

MAY 24.—By the <i>Teutonic</i> =Liverpool:	
Poel & Arnold.....	110,000
General Rubber Co.....	54,000
George A. Alden & Co.....	22,000
A. T. Morse & Co.....	7,500 193,500
MAY 25.—By the <i>Pennsylvania</i> =Hamburg:	
A. T. Morse & Co.....	11,000
George A. Alden & Co.....	11,000
Poel & Arnold.....	4,000
Rubber Trading Co.....	4,500 30,500
MAY 28.—By the <i>Cedric</i> =Liverpool:	
A. W. Brunn & Co.....	12,500
MAY 28.—By the <i>Etruria</i> =Liverpool:	
General Rubber Co.....	15,000
A. T. Morse & Co.....	9,000 24,000
MAY 29.—By the <i>Minnehaha</i> =London:	
George A. Alden & Co.....	23,000
General Rubber Co.....	50,000
Raw Products Co.....	4,500 77,500
MAY 31.—By the <i>Carmania</i> =Liverpool:	
General Rubber Co.....	58,000
A. W. Brunn & Co.....	22,500
Poel & Arnold.....	12,000
George A. Alden & Co.....	11,000 103,500
JUNE 2.—By the <i>Batavia</i> =Hamburg:	
A. T. Morse & Co.....	27,000
George A. Alden & Co.....	5,000 32,000
JUNE 2.—By the <i>Lucania</i> =Liverpool:	
George A. Alden & Co.....	29,000
F. R. Muller Co.....	12,000
A. T. Morse & Co.....	5,000
Henry A. Gould Co.....	5,000 51,000

AFRICANS—Continued.

JUNE 5.—By the <i>La Lorraine</i> —Havre:		
General Rubber Co.	22,000	
George A. Alden & Co.	15,000	37,000

JUNE 5.—By the <i>Kronland</i> —Antwerp:		
A. T. Morse & Co.	3,500	
Rubber Trading Co.	1,000	4,500

JUNE 7.—By the <i>Majestic</i> —Liverpool:		
A. T. Morse & Co.	8,000	
George A. Alden & Co.	5,500	13,500

JUNE 11.—By the <i>Celtic</i> —Liverpool:		
General Rubber Co.	45,000	
George A. Alden & Co.	7,000	
Poel & Arnold.	2,500	54,500

JUNE 11.—By the <i>Patricia</i> —Hamburg:		
A. T. Morse & Co.	25,000	
Rubber Trading Co.	6,000	31,000

JUNE 12.—By the <i>Zeeland</i> —Antwerp:		
Western Electric Co.	26,000	
Rubber Trading Co.	4,500	30,500

JUNE 13.—By the <i>Carania</i> —Liverpool:		
A. W. Brunn & Co.	6,500	
George A. Alden & Co.	4,500	11,000

JUNE 13.—By the <i>Oceanic</i> —Liverpool:		
Poel & Arnold.	7,000	
Rubber Trading Co.	7,000	14,000

JUNE 16.—By the <i>Pretoria</i> —Hamburg:		
A. T. Morse & Co.	11,000	
Rubber Trading Co.	3,000	14,000

JUNE 18.—By the <i>Campania</i> —Liverpool:		
General Rubber Co.	11,500	
George A. Alden & Co.	11,500	
Rubber Trading Co.	7,000	
Earle Brothers.	4,500	34,500

JUNE 19.—By the <i>Finland</i> —Antwerp:		
George A. Alden & Co.	200,000	
Poel & Arnold.	10,000	
Rubber Trading Co.	5,000	215,000

JUNE 19.—By the <i>Civic</i> —Liverpool:		
General Rubber Co.	125,000	
George A. Alden & Co.	56,000	181,000

JUNE 21.—By the <i>Teutonic</i> —Liverpool:		
A. W. Brunn & Co.	11,500	
A. T. Morse & Co.	4,500	
Poel & Arnold.	4,500	20,500

JUNE 22.—By the <i>Tregnac</i> —Bordeaux:		
General Rubber Co.	25,000	

AFRICANS—Continued.

JUNE 22.—By the <i>Waldersee</i> —Hamburg:		
Poel & Arnold.	9,000	
George A. Alden & Co.	5,500	
A. T. Morse & Co.	4,500	19,000

EAST INDIAN.

MAY 28.—By the <i>St. Louis</i> —London:		
A. T. Morse & Co.	15,000	

MAY 29.—By the <i>Minnehaha</i> —London:		
Robinson & Stiles.	18,000	
George A. Alden & Co.	4,500	
C. Van Postau Co.	2,500	25,000

JUNE 1.—By the <i>Verona</i> —Singapore:		
George A. Alden & Co.	40,000	
Winter & Smillie.	10,000	
Pierre T. Betts.	6,500	
Poel & Arnold.	6,500	63,000

JUNE 5.—By the <i>Minnetonka</i> —London:		
George A. Alden & Co.	3,500	
A. T. Morse & Co.	2,000	5,500

JUNE 7.—By the <i>Barotse</i> —Calcutta:		
George A. Alden & Co.	4,500	

JUNE 7.—By the <i>Shimosa</i> —Singapore:		
H. Raouli & Co.	10,000	

JUNE 14.—By the <i>Mesaba</i> —London:		
George A. Alden & Co.	5,000	

JUNE 15.—By the <i>Swazi</i> —Colombo:		
George A. Alden & Co.	16,000	
A. T. Morse & Co.	3,000	19,000

JUNE 18.—By the <i>New York</i> —London:		
Poel & Arnold.	6,500	

JUNE 18.—By the <i>Kennebec</i> —Singapore:		
George A. Alden & Co.	22,500	
Heabler & Co.	15,000	
Poel & Arnold.	25,000	
Pierre T. Betts.	15,000	
F. R. Muller & Co.	8,000	
A. W. Brunn & Co.	5,000	90,500

JUNE 18.—By the <i>Minneapolis</i> —London:		
Robinson & Stiles.	7,500	
C. Von Postau Co.	2,500	10,000

GUTTA-JELUTONG.

JUNE 1.—By the <i>Verona</i> —Singapore:		
Heabler & Co.	640,000	
H. Ranoli & Co.	300,000	
Max Israel.	300,000	

EAST INDIAN.—Continued.

Pierre T. Betts.	25,000	
Poel & Arnold.	25,000	1,000,000

JUNE 7.—By the <i>Shimosa</i> —Singapore:		
Poel & Arnold.	96,000	

JUNE 18.—By the <i>Kennebec</i> —Singapore:		
Heabler & Co.	530,000	
Poel & Arnold.	100,000	
F. R. Muller & Co.	50,000	
H. Ranoli & Co.	70,000	
George A. Alden & Co.	100,000	915,000

GUTTA-PERCHA AND BALATA.

JUNE 1.—By the <i>Verona</i> —Singapore:		
To Order.	10,000	

JUNE 2.—By the <i>Amerika</i> —Hamburg:		
To Order.	7,000	

JUNE 12.—By the <i>Meaba</i> —London:		
To Order.	10,000	
The B. F. Goodrich Co.	2,500	
Kempshall Manufacturing Co.	2,000	14,500

JUNE 22.—By the <i>Waldersee</i> —Hamburg:		
To Order.	7,000	

BALATA.

MAY 28.—By the <i>Grenada</i> —Trinidad:		
Thebaud Brothers.	1,500	
Raw Products Co.	1,000	2,500

JUNE 2.—By the <i>Amerika</i> —Singapore:		
Earle Brothers.	7,000	

JUNE 18.—By the <i>Campania</i> —Liverpool:		
F. R. Muller & Co.	6,500	

JUNE 18.—By the <i>Minneapolis</i> —London:		
George A. Alden & Co.	8,500	

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—MAY.

Imports:	Pounds.	Value.
India-rubber.	4,250,787	\$3,458,936
Gutta-percha.	14,716	30,941
Gutta jelutong (Pontianak).	414 151	12,960
Total.	4,679,654	\$3,482,837
Exports:		
India-rubber.	96,954	\$ 87,498
Reclaimed rubber.	150,600	19,306
Rubber scrap imported.	1,032,135	\$50,826

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1906.	5,831,338	247,195	5,584,143
January-March.	19,097,624	982,559	18,115,065
Four months, 1906.	24,928,962	1,229,754	23,699,208
Four months, 1905.	32,606,023	1,134,713	31,471,310
Four months, 1904.	28,222,397	1,126,691	27,095,706

GERMANY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1906.	2,663,760	502,260	2,161,500
January-March.	11,896,500	3,451,800	8,444,700
Four months, 1906.	14,560,260	3,954,060	10,606,200
Four months, 1905.	14,879,480	4,874,540	10,004,940
Four months, 1904.	12,143,780	3,779,600	8,364,180

FRANCE.*

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1906.	3,182,080	1,058,200	2,123,880
January-March.	8,984,360	4,179,340	4,805,020
Four months, 1906.	12,166,440	5,237,540	6,928,900
Four months, 1905.	10,216,580	5,599,000	4,617,580
Four months, 1904.	7,645,220	5,028,760	2,616,460

GREAT BRITAIN.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1906.	6,200,096	2,769,760	3,430,336
January-March.	17,647,168	9,875,824	7,771,344
Four months, 1906.	23,847,264	12,645,584	11,201,680
Four months, 1905.	21,776,608	12,835,096	8,941,512
Four months, 1904.	21,299,264	12,833,414	8,465,850

ITALY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1906.	252,780	27,500	225,280
January-March.	705,760	70,180	635,580
Four months, 1906.	958,540	97,680	860,860
Four months, 1905.	533,280	70,400	462,880
Four months, 1904.	598,180	25,960	572,220

BELGIUM †

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1906.	1,388,492	1,352,047	36,445
January-March.	5,708,573	2,821,909	2,886,664
Four months, 1906.	7,097,065	4,173,956	2,923,109
Four months, 1905.	6,272,223	4,076,729	2,195,494
Four months, 1904.	6,031,542	5,154,098	877,444

NOTE.—German statistics before Jan. 1, 1906, include Gutta percha, Balata, and old (waste) rubber. British figures include old rubber. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

*General Commerce.

†Special Commerce.

Where GOOD Rubber is PLENTIFUL and CHEAP

EVERY user of Rubber appreciates the high cost of the raw material.

All authorities agree that a high price level must exist for years to come. The demand for Rubber increases every day, and many sources of supply are becoming exhausted. The opening of a fresh source, with millions of untapped trees, makes possible a relatively low first cost, and the product will sell at the highest market price. There is money in such a proposition. Write for details of our plan for investing capital in rubber gathering.



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THE American Can Company is the largest producer in the United States of tin pails, tanks, boxes, dishes and other utensils, adapted to every business where a tin vessel is used.

We are therefore in a position to supply all your

**Rubber Cups Evaporating Dishes
Collecting Vessels Curing Vessels**

or any other tin specialty peculiar to the rubber business. When you buy—buy right—buy "Ameri-can" tinware.

RUBBER MILLS

We also make glue cans, cement cans, tanks, repair kit boxes to suit exacting trade requirements.

Write to us explaining your needs.

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447 West 14th Street, New York

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ANCHOR RUBBER TILING.

Most modern, attractive and durable flooring, noiseless and non-slippery.

Not affected by shock or vibration.

Especially adapted for corridors, vestibules, banks, elevators and marine construction.

Write for samples and prices.

Sole manufacturers Interlocking Anchor Tiling.



ANCHOR LINOTILE.

Same thickness, one-half the weight, one-half the cost of Rubber Tiling.

Same durability, Almost as attractive.

Designed especially for marine work.

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RUBBER

and other Tropical Seeds and Plants.

Hevea Brasiliensis (Para rubber) seeds supplied from August to October every year; booking necessary before the end of July to avoid disappointments. Stumps of both kinds shipped all the year round.

Castilloa Elastica seeds from June to October delivery.

Manihot Glaziovii (Ceara rubber) seeds supplied always. *Ficus elastica*, *Landolphia Kirkii*, *Funtumia elastica*, *Urceola esculenta*, and other Rubber seeds and plants available several times in the year.

Tea of different sorts, Hybrid Coffee, Nutmeg, Fibers, Shade and Timber trees; Fruits, etc.—Seeds, Plants and Grafts supplied. Descriptive Price Lists, with special offers of *Hevea* and *Castilloa* seeds and stumps, on view at THE INDIA RUBBER WORLD office, or free on application to

J. P. WILLIAM & BROTHERS,

Tropical Seed Merchants, HENERATGODA, CEYLON,

TELEGRAPHIC ADDRESS: WILLIAM, HENERATGODA, CEYLON.

A Honolulu rubber planting company cabled us in August: "Send 75,000 Para stumps, 25,000 seeds; remittance follows."

BUYERS' DIRECTORY OF THE RUBBER TRADE.

CLASSIFIED LIST OF MANUFACTURERS AND DEALERS IN INDIA-RUBBER GOODS AND RUBBER MANUFACTURERS' SUPPLIES.

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O	
Ohio Rubber Culture Co.	XLV
P	
Para Recovery Co.	XLIII
Peerless Rubber Mfg. Co.	XLVIII
Poquannoc Rubber Co.	XXIII
Peru-Para Rubber Co.	XLIX
Philadelphia Rubber Wks.	XXVIII
Picher Lead Co.	XXI
Pirelli & Co.	II, XII
Plymouth Rubber Co.	XXXI
Pure Gum Specialty Co.	XVI
R	
Republic Rubber Co.	XVI
Revere Rubber Co.	LVI

S	
S. & L. Rubber Co.	XL
San Giacomo Sons	XXV
Sayen, Osgood	XXXIX
Scheel, Wm. H.	XXVII
Schnurmann, J.	XXV
Schrader's Son, Inc., A.	XXV
Schwab & Co.	XXV
Seamless Rubber Co.	XXV
Sharples, Stephen P.	XL
Shelp Mfg. Co., Henry H.	XXII
Smith, P. C.	XXXIX
Speaight, Geo. W.	XXVI
Springfield Elastic Tread Co.	XLV
Stamford Rubber Supply Co.	XXVII
Standard Rubber Co.	X
Stockton Rubber Co.	XLII
Stokes Rubber Co., Jos.	IV
Summit China Co.	XLVIII
T	
Taintor Mfg. Co., H. F.	VII
Textile-Finishing Machinery Co.	XXXIV
Thropp's Sons Co., John E.	XXXVIII
Thropp, William E.	XXXVIII
Tire and Motor	XLV, XLVI
Trenton Rubber Mfg. Co.	IX
Trenton Rubber Reclaiming Works	XL
"Tropical Agriculturist"	LVII
Turner, Vaughn & Taylor Co.	XV
Tyer Rubber Co.	LVIII
Type & King	XXVII
U	
United States Graphite Co.	XLVI
United States Rubber Co.	LVII
U. S. Rubber Reclaiming Wks.	XXX
U. S. Waste Rubber Co.	LVII
V	
Voorhees Rubber Mfg. Co.	IV
W	
Wanted and For Sale	XLVII
Welt Mfg. Co.	I
Weilman Sole Cutting Machine Co.	XLIV
Westmoreland Rubber Mfg. Co.	XLII
Wetherill Co., S. P.	XXVII
White, T. & S. C. Co.	XXVI
Whitehead Brothers Rubber Co.	X
Williams & Bros., J. P.	XLIX
Wirt & Knox Mfg. Co.	XLII
Wolpert, M. J.	XLII
Woodman, Ph.D., Durand	XXVII
Y	
Yerdon, William	XXXIX

MECHANICAL RUBBER GOODS

Belting.
Diaphragms.
Gaskets.
Hose (Fire, Garden, Steam).
Mats and Matting.
Mould Work.
Packing.
Tubing.
Valves.
Washers.

Mechanical Rubber Goods-General.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Bowers Rubber Co., San Francisco, Cal.
Canadian Rubber Co. of Montreal.
Chicago Rubber Wks., Chicago.
Cincinnati Rubber Mfg. Co., Cincinnati.
Cleveland Rubber Co., Cleveland, O.
Continental Caoutchouc & Gutta-percha Co., Hanover, Germany.
The Dermatine Co., London.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N.J.
Eureka Fire Hose Co., New York.

Mechanical Goods-General-Continued.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha & Rubber Mfg. Co., Toronto.
Home Rubber Co., Trenton, N. J.
International A. & V. Tire Co., Milltown, N. J.
Lake Shore Rubber Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., New York.
National India-Rubber Co., Bristol, R.I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
North British Rubber Co., Ltd., Edinburgh.
Peerless Rubber Mfg. Co., New York.
Pirelli & Co., Milan, Italy.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston.
Standard Rubber Co., Trenton, N. J.
Jes. Stokes Rubber Co., Trenton, N. J.
Trenton Rubber Mfg. Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.
Whitehead Bros. Rubber Co., Trenton, N. J.

Air Brake Hose.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Electric Hose & Rubber Co., Wilmington, Del.

Air Brake Hose-Continued.

Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Belting (Canvas).

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Eureka Fire Hose Co., New York.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston-New York.

Billiard Cushions.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Manhattan Rubber Mfg. Co., New York.
New York Belting & Packing Co., Ltd.
New York Rubber Co., New York.
Revere Rubber Co., Boston-New York.

Blankets-Printers.

Peerless Rubber Mfg. Co., New York.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.

Blankets-Printers-Continued.

B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hodgman Rubber Co., New York.
Gustave Kush, New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Brushes.

Boston Woven Hose & Rubber Co.
C. J. Bailey & Co., Boston.

Buffers.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
National India Rubber Co., Bristol, R.I.
Revere Rubber Co., Boston, Mass.

Card Cloths.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R.I.

Carriage Mats.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
National India Rubber Co., Bristol, R.I.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Carriage Mats.—Continued.

N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston, Mass.
Voorhees Rubber Mfg. Co., Jersey City

Cord (Pure Rubber).

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Deckle Straps.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Door Springs.

Hodgman Rubber Co., New York.

Dredging Sleeves.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston, Mass.

Force Cups.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Fruit Jar Rings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
New York Belting & Packing Co., N. Y.

Fuller Balls.

B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago, Ill.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.

Gas Bags (Rubber).—Continued.

Peerless Rubber Mfg. Co., New York.
Iyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Gasket Tubing.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, O.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York
Mattson Rubber Co.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Home Rubber Co., Trenton, N. J.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Hose—Armored.

Hose—Wire Wound.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Electric Hose & Rubber Co., Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crute Co., Sharon Center, Ohio.

Hose Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Hose Linings.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston.

Hose—Protected.

Boston Belting Co., Boston-New York.
Gutta Percha & Rubber Mfg. Co., N. Y.
Electric Hose & Rubber Co., Wilmington, Del.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

COTTON AND LINEN.

Boston Belting Co., Boston-New York
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Co., New York.
Eureka Rubber Mfg. Co. of Trenton.
Fabrie Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha and Rubber Mfg. Co. of Toronto.

Hose—Rubber Lined.—Continued.

COTTON AND LINEN.

Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Boston Belting Co., Boston-New York.
Electric Hose & Rubber Co., Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.

"Jenkins '95" Packing.

Jenkins Bros., New York.

Lawn Sprinklers.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston New York.

Mould Work.

[See Mechanical Rubber Goods.]

Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
Hodgman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Mattson Rubber Co., New York.
Mitzel Rubber Co., Akron, O.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

"Nubian" Packing.

Voorhees Rubber Mfg. Co., Jersey City.

Oil Well Supplies.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Paper Machine Rollers.

Boston Belting Co., Boston-New York
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Peerless Rubber Mfg. Co., New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Republic Rubber Co., Youngstown, O.

Pump Valves.

[See Mechanical Rubber Goods.]

Jenkins Bros., New York.
Revere Rubber Co., Boston, Mass.

Rollers—Rubber Covered.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston New York.

Sewing Machine Rubbers.

B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hardman Rubber Co., Belleville, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston.

Tiling.

Anchor Tile Co., Trenton, N. J.
Canadian Rubber Co. of Montreal, Ltd.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
Voorhees Rubber Mfg. Co., Jersey City.

Tubing.

[See Mechanical Rubber Goods.]

American Hard Rubber Co., New York.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Hardman Rubber Co., Belleville, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Peerless Rubber Mfg. Co., New York
Republic Rubber Co., Youngstown, O.

Valves.

[See Mechanical Rubber Goods.]

Jenkins Bros., New York-Chicago.

Vulcanite Emery Wheels.

Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co. Ltd., New York.

Wringer Rolls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Republic Rubber Co., Youngstown, O.

RUBBER BUYERS' DIRECTORY—CONTINUED.

DRUGGISTS' AND STATIONERS' SUNDRIES

Atomizers.
Bandages.
Bulbs.
Syringes.
Water Bottles.

Druggists' Sundries—General.

American Hard Rubber Co., New York.
U. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Est. of Jos. Bacharach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
International A. & V. Tire Co., Milltown, N. J.
Mittel Rubber Co., Akron, O.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Balloons.

King & Leatherow, Newark, N. J.

Balls, Dolls and Toys.

New York Rubber Co., New York.

Combs.

American Hard Rubber Co., New York.

Elastic Bands.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, Ohio.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Mattson Rubber Co., New York.

Finger Cots.

Cleveland Rubber Co., Cleveland, Ohio.
Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

Gloves.

Canadian Rubber Co. of Montreal.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
King & Leatherow, Newark, N. J.
National India Rubber Co., Bristol, R. I.
Pure Gum Specialty Co., Barberton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Daval Rubber Co., Providence, R. I.
Hardman Rubber Co., Belleville, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.

Est. of Jos. Bacharach, Brooklyn, N. Y.
Cleveland Rubber Co., Cleveland, Ohio.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
National India Rubber Co., Bristol, R. I.
Pure Gum Specialty Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Nipples.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Seamless Rubber Goods.

H. A. Kaysan, Cassel, Germany.

Shower Bath Sprinklers.

A. Schrader's Son, Inc., New York.

Sponges (Rubber).

Faultless Rubber Co., Ashland, Ohio.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.

B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stoppies (Rubber).

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
A. Schrader's Son, Inc., New York.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS**Air Gowns (Rubber).**

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Cleveland Rubber Co., Cleveland, Ohio.
Daval Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.

Calendering.

La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
Gutta Percha & Rubber Mfg. Co., Toronto.
National India Rubber Co., Bristol, R. I.

Clothing.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Apparatus.

A. Schrader's S. B. Inc., New York.

Diving Dresses.

Hodgman Rubber Co., New York.

Dress Shields.

Mattson Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.

[See Clothing.]

Proofing.

Canadian Rubber Co. of Montreal.
La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.

Cravenette Co., Ltd.

Rubber Coated Cloths.

Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR**Boots and Shoes.**

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Canadian Rubber Co. of Montreal.
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Lycorning Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
North British Rubber Co., Ltd., Edinburgh.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Boots and Shoes—Continued.

National India Rubber Co., Boston.
North British Rubber Co., Ltd., Edinburgh.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Gutta-percha Co., Hanover.
Grieb Rubber Co., Trenton, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Springfield Elastic Tread Co., Springfield, Ohio.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Granby Rubber Co., Granby, Quebec.
La Crosse Rubber Mills Co., La Crosse, Wis.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER**Dental Gum.**

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., New York.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL**Electrical Supplies.**

American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Tyer Rubber Co., Andover, Mass.

Friction Tape.

Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Rubber Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Joseph Stokes Rubber Co., Trenton, N. J.

Insulating Compounds.

Canadian Rubber Co. of Montreal.
Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.

National India Rubber Co., Providence.

Splicing Compound.

Home Rubber Co., Trenton, N. J.

SPORTING GOODS**Foot Balls.**

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Golf Balls.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Submarine Outfits.

Hodgman Rubber Co., New York.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
H. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Striking Bags.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, Ohio.
Faultless Rubber Co., Akron, Ohio.
H. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

MISCELLANEOUS

Boiler Specialist.

H. W. Jones, New York.

Carriage Washer.

Ideal Carriage Washer Co.

Cement (Rubber).

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.

Cement (Rubber).—Continued.

Hadley Cement Co., Lynn, Mass.
Manhattan Rubber Mfg. Co., New York
N. J. Car Spring & Rubber Co., Jersey
City, N. J.
New York Belting & Packing Co., N. Y.

Chemical Analyses.

Durand Woodman, Ph. D., New York.
H. L. Terry, Manchester, England.

Chemists.

Stephen P. Sharples, Boston, Mass.
Durand Woodman, Ph. D., New York

Engraver.

F. C. Smith, Boston, Mass.

Rubber Journals.

Gummi-Zeitung, Dresden, Germany.

Rubber Planting.

Ohio Rubber Culture Co., Canton, Ohio.

Rubber Tree Seeds.

J. P. William & Bros., Heneratgoda,
Ceylon.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER
MACHINERY

Acid Tanks.

Birmingham Iron Foundry, Derby, Ct.

Band Cutting Machine.

A. Adamson, Akron, O.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Belt Folding Machines.

Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Slitters.

Cloth Dryers.

Gearing.

Shafting.

Wrapping Machines.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Stretchers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Hoggson & Pettis Mfg. Co., New Haven.

Boilers.

William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton,
N. J.

Braiders.

New England Butt Co., Providence, R. I.

Buckles.

The Weld Mfg. Co., Boston.

Cabling Machinery.

Alton Machine Co., New York.

Calenders.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Chucks (Lathe).

Hoggson & Pettis Mfg. Co., New Haven.

Churns.

American Tool & Machine Co., Boston.

Clutches.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Crackers.

Alton Machine Co., New York.

Devulcanizers.

Alton Machine Co., New York.
Biggs Boiler Works Co., Akron, Ohio.
Birmingham Iron Foundry, Derby, Ct.
Edred W. Clark, Hartford, Ct.
William R. Thropp, Trenton, N. J.

Dies.

John J. Adams, Worcester, Mass.
Barbour Bros., Trenton, N. J.
T. J. Beaudry, Marlboro, Mass.
Brookton Die Co., Brockton, Mass.
J. W. Dewees, Philadelphia, Pa.

Dies.—Continued.

Hoggson & Pettis Mfg. Co., New Haven.
Independent Die Co., Brockton, Mass.
Joseph E. Knox & Co., Lynn, Mass.

Doubling Machines.

American Tool & Machine Co., Boston.

Drying Apparatus.

American Process Co., New York.

Drying Machines.

Alton Machine Co., New York.
Joseph F. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.

Textile-Finishing Machinery Co., Providence, R. I.

Engines, Steam.

Alton Machine Co., New York.
William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton,
N. J.

Engraving Roll.

Hoggson & Pettis Mfg. Co., New Haven.

Forms.

Summit China Co., Akron, Ohio.

Grinders and Mixers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Hangers.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Hose Machines.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.

Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Hydraulic Machinery.

Insulating Machinery.

Iron Castings.

Alton Machine Co., New York.

Lasts (Rubber Shoe).

Middlesex Last Co., Boston.

Lathes—Hard Rubber.

A. Adamson, Akron, Ohio.

Lathes—Jar Ring.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
William R. Thropp, Trenton, N. J.

Machinists' Tools.

Hoggson & Pettis Mfg. Co., New Haven.

Moulds.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
W. E. Arnold, Malden, Mass.
Barbour Bros., Trenton, N. J.

Rubber Growers' Utensils.

CEMENT CANS AND TANKS.

American Can Co., New York.

REPAIRING KIT BOXES.

American Can Co., New York.

Moulds.—Continued.

Birmingham Iron Foundry, Derby, Ct.
J. W. Dewees, Philadelphia, Pa.
Hoggson & Pettis Mfg. Co., New Haven.

Pillow Blocks.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Presses (for Rubber Work.)

A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse,
N. Y.
Edred W. Clark, Hartford, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Pumps.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse,
N. Y.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Racks for Boot and Shoe Cars.

Hoggson & Pettis Mfg. Co., New Haven.

Reducing Valves.

Mason Regulator Co., Boston.

Rollers (Hand).

Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.

Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Separators.

Turner, Vaughn & Taylor Co., Cuyahoga
Falls, Ohio.

Separators for Reclaimed Rubber.

American Process Co., New York.

Special Rubber Machinery.

Alton Machine Co., New York.
Wellman Sole Cutting Machine Co.,
Medford, Mass.

Spreaders.

Alton Machine Co., New York.
American Tool & Machine Co., Boston
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Steam Traps and Specialties.

Jenkins Bros., New York.
Mason Regulator Co., Boston.
Osgood Sayen, Philadelphia, Pa.

Steel Stamps.

Hoggson & Pettis Mfg. Co., New Haven.

Stitchers (Hand).

Hoggson & Pettis Mfg. Co., New Haven.

Strip Covering Machines.

Strip Cutters.

Alton Machine Co., New York.

New England Butt Co., Providence, R. I.

Tire Molds.

Bay State Machine Co., Erie, Pa.

Tubing Machines.

A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Edred W. Clark, Hartford, Ct.
John Royle & Sons, Paterson, N. J.

Vacuum Drying Chambers

Alton Machine Co., New York.
Joseph P. Devine Co., Buffalo, N. Y.

Varnishing Machines.

Birmingham Iron Foundry, Derby, Ct.

Vulcanizers.

Alton Machine Co., New York.
Biggs Boiler Works Co., Akron, Ohio.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.
John E. Thropp's Sons Co., Trenton,
N. J.

Washers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.
Turner, Vaughn & Taylor Co., Cuyahoga
Falls, Ohio.

Wire Insulating Machines.

Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Wire Rope Machinery.

Alton Machine Co., New York.

SECOND-HAND
MACHINERY.

Philip Broomfield, Boston, Mass.
W. C. Coleman Co., Rochelle Park, N. J.
Philip McGrory, Trenton, N. J.
M. Norton & Co., Charlestown, Mass.

FACTORY
SUPPLIES

Acid (Carbolic).

Barrett Mfg. Co., Philadelphia.

Antimony, Sulphurets of.

GOLDEN.

Action-Ges. Georg Egestorff's Salz-
werke, Linden, Germany.
Atlas Chemical Co., Newtonville, Mass.
GOLDEN AND CRIMSON.
Joseph Cantor, New York.
Geo. F. Lufbery, Jr., Elizabeth, N. J.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typle & King, London, England.

Balata.

George A. Alden & Co., Boston.

Benzol.

Barrett Mfg. Co., Philadelphia.

Samuel Cabot, Boston.

Black Hypo.

Joseph Cantor, New York.
William H. Scheel, New York.
Typle & King, London, England.

Boxes (Wood).

Henry H. Sheple & Co., Philadelphia.

Brass Fittings.

A. Schrader's Son, Inc., New York.

Carbon Bisulphide.

George W. Speaight, New York.

Caustic Soda.

Acker Process Co., Niagara Falls, N. Y.

Chemicals.

Acker Process Co., Niagara Falls, N. Y.
George W. Speaight, New York.
S. P. Wetherill Co., Philadelphia, Pa.

Colors.

Joseph Cantor, New York.
William H. Scheel, New York.
Typle & King, London, England.
S. P. Wetherill Co., Philadelphia, Pa.

MACHINERY AND SUPPLIES FOR RUBBER MILLS—CONTINUED.

<p>Crude Rubber. George A. Alden & Co., Boston. A. W. Brunn & Co., New York. Hagemeyer & Brunn, New York. Adolph Hirsch & Co., New York. F. R. Müller & Co., New York. Fara Recovery Co., Bayonne, N. J. Rubber Trading Co., New York-Boston.</p> <p>Dermatine. The Dermatine Co., London.</p> <p>Drills. Duck (Cotton). J. H. Lane & Co., New York.</p> <p>Gilaonite. William H. Scheel, New York.</p> <p>Graphite. United States Graphite Co., Philadelphia.</p> <p>Graphite Grease. Jos. Dixon Crucible Co., Jersey City.</p> <p>Guayule Rubber. Ed. Maurer, New York.</p> <p>Gutta-Percha. George A. Alden & Co., Boston. Rubber Trading Co., New York-Boston.</p> <p>Hose Bands, Straps & Menders. Boston Woven Hose & Rubber Co. William Yerdon, Fort Plain, N. Y.</p> <p>Hose Pipes, Nozzles & Couplings. Boston Woven Hose & Rubber Co. Eureka Fire Hose Co., New York. Revere Rubber Co., Boston. A. Schrader's Son, Inc., New York.</p>	<p>Hydro-Carbon Products. Geo. A. Alden & Co., Boston. William H. Scheel, New York.</p> <p>Infusorial Earth. Stamford (Conn.) Rubber Supply Co.</p> <p>Lampblack. Samuel Cabot, Boston.</p> <p>Lawn-Hose Supporters. O. J. Bailey & Co., Boston.</p> <p>Lead—Blue. Lead—Sublimed White. Fischer Lead Co., Chicago, Ill.</p> <p>Lithopone. Gabriel & Schall, New York.</p> <p>Naphtha. Barrett Mfg. Co., Philadelphia.</p> <p>Paris White and Whiting. H. F. Taintor Mfg. Co., New York.</p> <p>Reclaimed Rubber. Alkali Rubber Co., Akron, Ohio. American Reclaimed Rubber Co., Rochelle Park, N. J. F. H. Appleton & Son, Boston. Bloomington (N. J.) Soft Rubber Co. E. H. Clapp Rubber Co., Boston, Mass. Danversport Rubber Co., Boston. Derby Rubber Co., Derby, Conn. Eastern Rubber Co., New York. Treston (N. J.) Rubber Reclaiming Works. Manufactured Rubber Co. New Jersey Rubber Co., Lambertville, N. J.</p>	<p>Reclaimed Rubber.—Continued. Pequanoc Rubber Co., Butler, N. J. Philadelphia Rubber Wks., Philadelphia. Stockton Rubber Co., Stockton, N. J. Jos. Stokes Rubber Co., Trenton, N. J. S. & L. Rubber Co., Chester, Pa. U. S. Rubber Reclaiming Wks., N. Y. Westmoreland Rubber Mfg. Co., Grapeville, Pa.</p> <p>AGENTS AND DEALERS. Goldberg & Rathman, Boston, Mass. Phillip McGrory, Trenton, N. J. H. P. Moorhouse, Paris, France. Rubber Trading Co., New York-Boston. Wm. Somerville's Sons, Liverpool.</p> <p>Scrap Rubber. L. Albert & Son, Trenton, N. J. Bera & Co., Philadelphia. P. Broomfield & Co., Boston. C. Clifford, Baltimore, Md. W. C. Coleman Co., Rochelle Park, N. J. Wm. H. Cummings & Sons, New York. Goldberg & Rathman, Boston, Mass. Theodore Hofeiler & Co., Buffalo, N. Y. A. W. Leslie & Co., Ltd., London, Eng. B. Loewenthal & Co., New York and Chicago. J. Loewenthal & Sons, Chicago. Phillip McGrory, Trenton, N. J. Meyer Bros., Philadelphia, Pa. Trenton (N. J.) Rubber Reclaiming Works. M. Norton & Co., Charlestown, Mass. Henry P. Hindakopf, Brooklyn, N. Y. San Giacomo Sons, Newark, N. J. J. Schuurmann, London. Schwab & Co., Philadelphia.</p>	<p>Scrap Rubber.—Continued. United States Waste Rubber Co., Brockton, Mass. J. Wolpert, Odessa, Russia.</p> <p>Substitute. Joseph Cantor, New York Geo. F. Lufbery, Jr., Elizabeth, N. J. Massachusetts Chemical Co., Boston. Wm. H. Scheel, New York. Stamford (Conn.) Rubber Supply Co. Typke & King, London, England.</p> <p>Sulphur. Battelle & Ranwick, New York. T. & S. C. White Co., New York.</p> <p>Sulphur Chloride. Acker Process Co., Niagara Falls, N. Y. William H. Scheel, New York. George W. Speaight, New York. Stamford (Conn.) Rubber Supply Co.</p> <p>Tire Fabrics. J. H. Lane & Co., New York.</p> <p>Tire Valves. A. Schrader's Son, Inc., New York.</p> <p>Valves for Air Goods. A. Schrader's Son, Inc., New York.</p> <p>Wooden Shells. Adolph Martin, Passaic, N. J.</p> <p>Zinc Sulphide. Joseph Cantor, New York. Typke & King, London, England</p> <p>Zinc White. New Jersey Zinc Co., New York. Stamford (Conn.) Rubber Supply Co.</p>
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BUYERS' DIRECTORY

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Rubber Tires and Accessories.

<p>Auto Top Fabrics. Chase & Co., L. C., Boston, Mass. Hodgman Rubber Co., New York. Muttly & Co., L. J., Boston, Mass. National India Rubber Co., Bristol, R. I.</p> <p>Cases, Tire. Gilbert Mfg. Co., New Haven, Conn.</p> <p>Covers, Tire. Wiley & Son Co., Wm. H., Hartford, Conn.</p> <p>Fabrics. Chase & Co., L. C., Boston, Mass. Lane & Co., J. H., New York. Muttly & Co., L. J., Boston, Mass. National India Rubber Co., Bristol, R. I.</p> <p>Insulated Wires. Clark Insulation Co., Boston, Mass. National India Rubber Co., Bristol, R. I.</p> <p>Flats. Automobile. Boston Woven Hose & Rubber Co., Cambridge, Mass. Manhattan Rubber Mfg. Co., New York. National India Rubber Co., Bristol, R. I. Revere Rubber Co., Boston, Mass.</p> <p>Pumps, Tire. Pacific Tucking & Mfg. Co., Brooklyn, N. Y.</p> <p>Repair Stock. Trenton Rubber Mfg. Co., Trenton, N. J.</p> <p>Rims, Wheel. Hartford Rubber Works Co., Hartford, Conn. Goodrich Co., B. F., Akron, Ohio Goodyear Tire & Rubber Co., Akron, Ohio.</p> <p>Tires. Bailey & Co., C. J., Boston, Mass. Canadian Rubber Co. of Montreal, Ltd. Continental Caoutchouc Co., New York.</p>	<p>Consolidated Rubber Tire Co., New York—Akron, Ohio. Diamond Rubber Co., Akron, Ohio. Dunlop Tire & Rubber Goods Co., Toronto. Electric Rubber Mfg. Co., Rutherford, N. J. Empire Rubber Mfg. Co., Trenton, N. J. Firestone Tire & Rubber Co., Akron, Ohio. Fisk Rubber Co., Chicopee Falls, Mass. F. W. Skinner, Advance Tire Co., Valley Falls, R. I. G. & J. Tire Co., Indianapolis, Ind. Goodrich Co., B. F., Akron, Ohio. Gutta Percha & Rubber Mfg. Co., Toronto. Harburg Tire Co., Harburg, Germany. Harburg-Vienna India Rubber Co., Harburg, Germany. Hartford Rubber Works Co., Hartford, Conn. Healy Leather Tire Co., New York. Indiana Rubber & Insulated Wire Co., Jonesboro, Ind. International A. & V. Tire Co., Milltown, N. J. Kasner, A. H., New York. Kokomo Rubber Co., Kokomo, Ind. Lake Shore Rubber Co., Erie, Pa. Michelin Products Selling Co., New York. Michelin Tire American Agency, Inc., New York. Mitchell Punctureless Pneumatic Tire Co., Swampscott, Mass. Morgan & Wright, Chicago, Ill. Motz Clincher Tire & Rubber Co., Akron, Ohio. North British Rubber Co., Ltd., Edinburgh, Scotland. Pirelli & Co., Milan, Italy. Plymouth Rubber Co., Stoughton, Mass. Republic Rubber Co., Youngstown, Ohio. Sirdar Rubber Co., Ltd., London, England. St. John Rubber Tire Co., Inc., New York. Sweet Tire & Rubber Co., Batavia, N. Y. Swinehart Clincher Tire & Rubber Co., Akron, Ohio.</p>	<p>Trenton Rubber Mfg. Co., Trenton, N. J. United Berlin Frankfort India Rubber Co., Ltd., Berlin, Germany. Universal Tire Co., N. Y.</p> <p>AUTOMOBILE AND CARRIAGE. Boston Belting Co., Boston-New York. Eureka Rubber Mfg. Co., Trenton, N. J. Revere Rubber Co., Boston-New York.</p> <p>Tire Applying Machines. Nelson & Le Moon, Chicago, Ill.</p> <p>Tire Cases. Gilbert Mfg. Co., New Haven, Conn.</p> <p>Tire Covers. Wiley & Son Co., Wm. H., Hartford, Conn.</p> <p>Tire Fabrics. Lane & Co., J. H., New York.</p> <p>Tire Pumps. Pacific Tucking & Mfg. Co., Brooklyn, N. Y.</p> <p>Tire Repairing. Boston Vulcanizing Co., Boston, Mass. Foote Rubber Co., D. E., Cleveland, Ohio. Republic Rubber Tire & Shoe Co., New York. Voorhees Rubber Mfg. Co., Jersey City, N. J.</p> <p>Treads. Boston Woven Hose & Rubber Co., Cambridge, Mass. Leather Tire Goods Co., Newton Upper Falls, Mass. Manhattan Rubber Mfg. Co., New York. Revere Rubber Co., Boston, Mass.</p> <p>Valves, Tire. Schrader's Sons, Inc., A, New York.</p> <p>Vulcanizer, Tire. Auto Tire Vulcanizing Co., Lowell, Mass.</p> <p>Wires, Insulated. Clark Insulation Co., Boston, Mass. National India Rubber Co., Bristol, R. I.</p>
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